

***58th SOW Low-Dust
Helicopter Landing Zone***

**Final
Environmental Assessment**

November 2012

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ACRONYMS AND ABBREVIATIONS

ABQ	Albuquerque International Sunport	IFR	Instrument Flight Rule
ABW	Air Base Wing	IR	Instrument Route
AETC	Air Education and Training Command	LATN	Low Altitude Tactical Navigation
AFB	Air Force Base	L _{max}	Maximum Sound Level
AFI	Air Force Instruction	MSL	mean sea level
AFSC	Air Force Safety Center	MTR	Military Training Route
AGL	above ground level	MRT	Maintenance Recovery Team
AICUZ	Air Installation Compatible Use Zone	NAAQS	National Ambient Air Quality Standards
APE	Area of Potential Effects	NEPA	National Environmental Policy Act
AQCR	Air Quality Control Region	nm	Nautical mile
BASH	Bird/wildlife-Aircraft Strike Hazard	NM	New Mexico
CEQ	Council on Environmental Quality	NMDGF	New Mexico Department of Game and Fish
CFR	Code of Federal Regulations	NMED	New Mexico Environment Department
CO ₂ e	Carbon dioxide equivalent	RNM	Rotorcraft Noise Model
CSAR	Combat Search and Rescue	ROI	Region of Influence
dB	Decibel	RQS	Rescue Squadron
DNL	Day-Night Average Sound Level	SEL	Sound Exposure Level
DoD	Department of Defense	SHPO	State Historic Preservation Office/Officer
DoN	Department of Navy	SOS	Special Operations Squadron
EA	Environmental Assessment	SOW	Special Operations Wing
EBS	Environmental Baseline Survey	SUA	Special Use Airspace
EIS	Environmental Impact Statement	SR	Slow Route
EO	Executive Order	U.S.	United States
ERP	Environmental Restoration Program	USAF	United States Air Force
ESA	Endangered Species Act	USCB	United States Census Bureau
FAA	Federal Aviation Administration	USEPA	United States Environmental Protection Agency
ft	feet	USFWS	United States Fish and Wildlife Service
FONSI	Finding of No Significant Impact	USMC	U.S. Marine Corps
GHG	Greenhouse Gases	VFR	Visual Flight Rule
HLZ	Helicopter Landing Zone	VR	Visual Route
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning		

Final

FINDING OF NO SIGNIFICANT IMPACT (FONSI) AND FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA) FOR THE 58TH SPECIAL OPERATIONS WING LOW-DUST HELICOPTER LANDING ZONE, KIRTLAND AIR FORCE BASE, NEW MEXICO

Pursuant to provisions of the National Environmental Policy Act (NEPA), 42 United States Code (USC) 4321 to 4270d, implementing Council on Environmental Quality (CEQ) Regulations, 40 Code of Federal Regulations (CFR) 1500-1508, and 32 CFR Part 989, Environmental Impact Analysis Process, the U.S. Air Force (AF) assessed the potential environmental consequences associated with establishing a low-dust helicopter landing zone (HLZ) for the 58th Special Operations Wing (58 SOW) operating out of Kirtland Air Force Base (AFB), New Mexico (NM).

The purpose of the Proposed Action is to acquire or lease a HLZ closer to Kirtland AFB to support low-dust HLZ training for CV-22 and HH-60 aircrews (with only occasional use by UH-1 aircrews). The current low-dust HLZ is located over 100 miles away from Kirtland AFB, in southeast Colorado. The need for the Proposed Action is to decrease the wear and tear on aircraft engines and equipment, minimize time lost flying to and from the base to the distant HLZ, lessen costs incurred for fuel, and decrease the distance maintenance aircrews need to travel in case of aircraft breakdowns.

The Environmental Assessment (EA), incorporated by reference into this finding, analyzes the potential environmental consequences of activities associated with establishing a 25-acre low-dust HLZ in McIntosh, NM. Up to 96 CV-22 and up to 88 HH-60/UH-1 sorties would be generated at the proposed HLZ. The CV-22s and helicopters would not operate at the HLZ at the same time and no other aircraft except those from the 58 SOW would conduct operations at this HLZ. Neither personnel nor cargo would leave the aircraft unless under emergency situations. No changes in the type or number of operations at Kirtland AFB would occur.

The EA considered all potential impacts of the Proposed Action and No Action Alternative as well as cumulative environmental effects with other projects in the area of the proposed HLZ.

PROPOSED ACTION

The AF would acquire (by sublease) a new low-dust HLZ for CV-22, HH-60, and UH-1 aircraft operating out of Kirtland AFB, NM. The proposed 25-acre HLZ is located 65 miles from Kirtland AFB, is privately owned, and maintained as a sod farm. The AF would lease the land but the site would still be maintained by the land owner for sod production. The site will be used in its current condition, no improvements such as grading or construction would be required.

NO-ACTION ALTERNATIVE

Under this alternative, HLZ operations would continue at the current site in southeast Colorado.

SUMMARY OF FINDINGS

Proposed Action: No significant impacts are anticipated for airspace management and use and safety. No new airspace would be created, and there would be no increases in flight operations to conflict with existing civilian, commercial, and military use of the regional airspace, and the 58 SOW would continue to follow all Federal Aviation Administration-regulated airspace management procedures. All safety regulations and procedures currently in force would continue to be applied to minimize risks to aircrews and the general population. No unacceptable hazards to military personnel, the public, and property would occur nor would the ability to provide safe operations be hindered. In terms of land management and use, there would be no incompatibilities introduced to preclude current management and use of lands at and around the proposed HLZ site and, therefore, no significant impacts. Noise levels while in transit

to and from, as well as around the proposed HLZ would exceed 65 decibels; however, operations generating these noise levels would occur on average about 1 time per 24 hours, be intermittent, and not of a duration to pose a risk to human hearing or to the natural environment. While there could be potential noise effects that could startle animals (including wildlife and domesticated animals), impacts are unlikely to be significant. There are no special status species found at the HLZ site that would be affected by the Proposed Action; startle effects to species that occur under areas where aircraft would transit to and from the HLZ are unlikely to be significantly affected. No other projects in the region of the proposed HLZ would be significantly impacted when considered cumulatively with the Proposed Action.

No-Action Alternative: low-dust operations would continue at the HLZ in southeast Colorado and existing environmental conditions would remain unchanged with no significant impacts.

FINDING OF NO PRACTICABLE ALTERNATIVE

Pursuant to Executive Order 11990 and 32 CFR 989.14(g), the authority delegated in Secretary of the Air Force Order 791.1, and taking the information contained in the attached EA into consideration, I find there is no other practicable alternative to implementing the Proposed Action within the floodplain and that the Proposed Action includes all practicable measures to minimize harm to the floodplain environment.

FINDING OF NO SIGNIFICANT IMPACT

Based on my review of the facts and analyses contained in the attached EA, conducted under the provisions of NEPA, CEQ Regulations, and 32 CFR Part 989, and after careful review of the potential impacts, I find that there will be no significant impact on the quality of the human or natural environment, either individually or cumulatively with the Proposed Action. Accordingly, an Environmental Impact Statement is not required. The signing of this Finding of No Significant Impact and Finding of No Practicable Alternative completes the environmental impact analysis process.

CONCLUSION

Based on the descriptions and analysis in this EA, I conclude that implementation of the Proposed Action would not result in significant impacts to the quality of the human or the natural environment.

Signature on File

JAMES E. FITZPATRICK, GS-15, P.E., CFM
Chief, Engineering Division
Headquarters Air Education and Training Command

7 November 2012

Date

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1.0 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

CHAPTER 1.0 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

This Environmental Assessment (EA) was prepared by the United States (U.S.) Air Force (Air Force or USAF) in accordance with the National Environmental Policy Act (NEPA) of 1969. It presents an evaluation of the potential environmental impacts associated with acquiring and operating a new low-dust Helicopter Landing Zone (HLZ) in New Mexico (NM) for the 58th Special Operations Wing (58 SOW), a unit of the Air Education and Training Command (AETC). This low-dust HLZ would be primarily used by CV-22 tilt-rotor and HH-60 rotary aircraft operating from Kirtland Air Force Base (AFB) in Albuquerque, NM (Figure 1-1). Occasional use would also be undertaken by the UH-1, also based at Kirtland AFB.

1.2 BACKGROUND

Kirtland AFB is located in southeast Albuquerque, NM in Bernalillo County, situated between the Sandia and Manzano mountain ranges. The base encompasses over 52,000 acres but jointly shares runways and airspace with commercial aviation flying into and out of Albuquerque International Sunport (ABQ).

The 58 SOW's mission is to provide the Air Force with combat-ready aircrews with specific training in special operations, personnel recovery (i.e., combat search and rescue [CSAR]), missile site support, and distinguished visitor airlift. The 58 SOW also provides the personnel and aircraft needed to respond to crises around the world and assist civilian authorities in regional rescues (AETC 2012a). Under the 58 SOW, the 58th Operations Group:

- trains aircrews in two types of helicopters, five specialized versions of the C-130 aircraft, and the CV-22 aircraft;
- conducts special operations and CSAR intelligence training; and
- responds to contingencies and humanitarian missions (AETC 2012a).



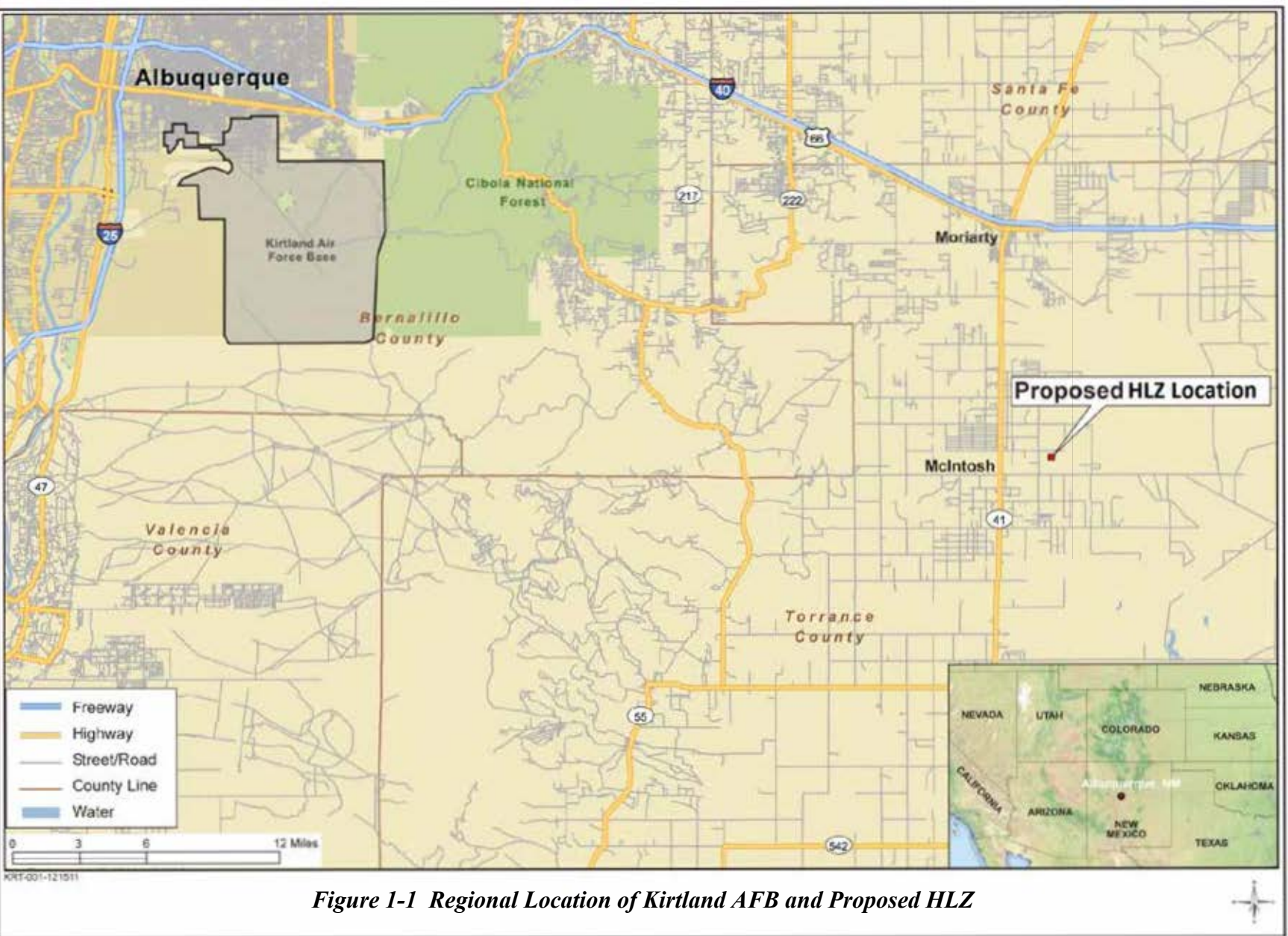


Figure 1-1 Regional Location of Kirtland AFB and Proposed HLZ

Once trained and mission ready, aircrews go on to serve in Air Force Special Operations Command, Air Mobility Command, Air Combat Command, Pacific Air Forces, USAF in Europe, Air Force Space Command, and Air Force Reserve and Air National Guard components.

Training is the primary means for maintaining, improving, and evaluating the Air Forces' readiness to fight and win. An integral part of 58 SOW aircrew training involves operations at an HLZ with a low-dust environment. This type of training is required by AETC flight operations instructions and syllabi (USAF 2011a, 2011b, 2009, and 2007). The low-dust HLZ serves as a transition between aircrew training at a fully developed (i.e., paved) HLZ at Kirtland AFB, which has little or no probability of generating dust or other flying objects, to remote sites in the adjacent desert and mountains that are completely undeveloped, with high probability of generating dust and other flying objects.

Currently, the 58 SOW undertakes low-dust training in southeast Colorado, over 260 miles (226 nautical miles [nm]) away from Kirtland AFB; no other low-dust HLZs are located closer to the base. This HLZ is vegetated to limit generation of dust and flying objects and located in an isolated area with no encroachment, light pollution, or conflicting land uses. It is about 15 acres in size, clear of vertical obstacles higher than 20 inches, but not easily accessible by roads. Use of this distant HLZ requires extended flight time to and from the site; increases wear and tear on aircraft engines and equipment; and in case of aircraft breakdown requires maintenance crews to travel long distances from Kirtland AFB to the HLZ site. Primary users of the low-dust HLZ are two squadrons within the 58th Special Operations Group: 512th Rescue Squadron (512 RQS) and the 71st Special Operations Squadron (71 SOS).

The 512 RQS trains HH-60G and UH-1N aircrews in special operations and CSAR for world-wide deployment. The primary mission of the HH-60G Pave Hawk helicopter and aircrew (consisting of a pilot, co-pilot, flight engineer, and gunner) is to conduct day and night personnel recovery operations in hostile environments to recover isolated personnel during war and to perform civil search and rescue. The HH-60G comes equipped with a hoist capable of lifting a 600-pound load from a hover height of 200 feet (ft) (AETC 2012b). HH-60G day and night training, at the low-dust HLZ, includes approaches, landings, departures, and hovers, as well as hoist and rope deployment (without the use of cargo or personnel rappelling or jumping from the aircraft).

While the UH-1N uses the HLZ only occasionally, it is a light-lift utility helicopter with three aircrew members (pilot, co-pilot, and flight engineer) with the primary mission of airlifting emergency security and disaster response forces, emergency evacuation of key government officials, and airlifting distinguished visitors and missile support personnel. Day and night training at the low-dust HLZ includes approaches, landings, departures, and hovering maneuvers (AETC 2012c).

The 71 SOS's mission is to provide combat-ready CV-22 personnel to Air Force Special Operations Command (AETC 2012a). The CV-22 is a twin-engine, tilt-rotor vertical or rolling/short take-off and landing aircraft designed to conduct long-range infiltration, exfiltration, and resupply missions for special operations forces. The unique tilt-rotor allows the CV-22 to operate as a helicopter or turboprop, combining the hovering advantages of a helicopter with the high-speed and high-altitude cruise capability

of a modern turboprop aircraft. Operated by a pilot, co-pilot, and two flight engineers, the CV-22 can operate from austere expeditionary sites, providing virtually unlimited forward operating base options. Day and night training at the low-dust HLZ is similar to the HH-60 where aircrews practice approaches, landings, departures, and hovering maneuvers, as well as hoist and rope operations. Training is done without the use of cargo or personnel rappelling or jumping from the aircraft.

1.3 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The **purpose** of the Proposed Action is to acquire a site closer to Kirtland AFB to support low-dust HLZ training for CV-22 and HH-60 aircrews (with only occasional use by UH-1 aircrews). As was mentioned above, the current low-dust HLZ is located in southeast Colorado. The **need** for the Proposed Action is to decrease the wear and tear on aircraft engines and equipment, minimize time lost flying to and from the base to the distant HLZ, lessen costs incurred for fuel, and decrease the distance maintenance aircrews need to travel in case of aircraft breakdowns. By meeting this need, the Air Force's mission of providing highly qualified pilots and flight engineers for special operations, as well as personnel recovery missions, continues to be met.

Currently, aircrews from these squadrons practice low-dust HLZ operations at Piñon Canyon military operating area in southeast Colorado. This HLZ is approximately 260 miles (226 nm), or about 1 hour flight time from Kirtland AFB. At this distance, expensive fuel is consumed to fly to the Colorado HLZ, valuable training time is expended in transit to and from the HLZ, and undue wear and tear is imposed on both engines and aircraft frames. Another factor contributing to the need for the Proposed Action is that when there are aircraft maintenance issues (i.e., breakdowns) during these low-dust HLZ operations, much time is wasted by ground-crews who have to drive to the HLZ in Colorado, make the necessary repairs, and then return to the base in NM.

1.4 THE ENVIRONMENTAL REVIEW PROCESS

1.4.1 The National Environmental Policy Act

NEPA requires consideration of environmental issues in federal agency planning and decision making. Under NEPA, federal agencies must prepare an EA or Environmental Impact Statement (EIS) for any major federal action, except those actions that are determined to be "categorically excluded" from further analysis. An EA is a concise public document that provides sufficient analysis for determining whether the potential environmental impacts of a Proposed Action are significant, resulting in the preparation of an EIS; or if not significant, resulting in the preparation of a Finding of No Significant Impact (FONSI)/Finding of No Practicable Alternative (FONPA).

1.4.2 Documents Incorporated by Reference

In accordance with Council on Environmental Quality (CEQ) regulations for implementing NEPA and with the intent of reducing the size of this document, the following material (ordered by date) relevant to the Proposed Action is being incorporated by reference. Actions related to training operations by aircraft from Kirtland AFB have been included in the environmental analysis of this EA.

- FONSI and Final Supplemental EA. Proposed Actions by the 58th Special Operations Wing at Kirtland Air Force Base, NM. June 2008 (AETC 2008).
- FONSI and Final EA. Proposed Actions by the 58th Special Operations Wing at Kirtland Air Force Base, NM. August 2000 (AETC 2000).

1.4.3 Scoping and Alternatives Development

Scoping is an early and open process for developing the breadth of issues to be addressed in the EA and for identifying significant concerns related to a Proposed Action. Through the Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) process (Air Force Instruction [AFI] 32-7060), the Air Force notified relevant federal, state, and local agencies of the Proposed Action; the U.S. Fish and Wildlife Service also was informally consulted. In addition, the Air Force has initiated project-specific government-to-government consultation with federally-recognized Indian Tribes. Of the 24 IICEP and 26 government-to-government project-specific consultation letters sent, the Air Force received five responses: the Natural Resources Conservation Service responded that no prime or unique farmlands would be affected, the U.S. Forest Service had no concerns with the proposal, the New Mexico Department of Game and Fish (NMDGF) suggested that before operations begin that a raptor nesting survey be conducted within a half-mile of the HLZ during the breeding season (May through August), Torrance County Planning and Zoning did not find any issues with the proposal, and the Pueblo of Santa Ana indicated that no pueblo lands or resources would be affected. Comments from the IICEP recipients, responses to informal consultation from the agencies, and any concerns identified by Indian Tribes were addressed and subsequently incorporated into the Draft EA (Appendix A contains the mailing list, IICEP correspondence, informal agency coordination, project specific government-to-government consultation letters, and any responses received).

This EA evaluates and assesses the environmental impacts of leasing and operating at a new low-dust HLZ in NM. Implementation of this proposal would not generate any additional operations out of Kirtland AFB or ABQ, require new airspace designations, or include use of the HLZ by aircraft from other Department of Defense (DoD) commands.

1.4.4 Public Comment on Draft EA

The Air Force sent out the Draft EA on June 8, 2012 and announced its availability in the *Albuquerque Journal* on June 10, 2012 (Appendix B provides a copy of the availability notice). The EA was sent to 55

recipients, eight public libraries, and posted on the Kirtland AFB website for review. Over the 30-day review period, five comments from state and local agencies, one from the Navajo Nation, and one from the general public were received. The New Mexico Environment Department (NMED) noted that construction would require National Pollutant Discharge Elimination System (NPDES) permitting, water quality assurances, and air emissions evaluation. In addition, they requested that any discharges from emergency and maintenance equipment be reported. The NMDGF acknowledged that the approach was adequate for surveying for raptor nests. The NM State Historic Preservation Officer concurred with the Air Force finding of no effect on historic properties. Torrance County Planning and Zoning provided updated information on floodplains at the proposed site and the Mid-Region Council of Governments noted their support of the proposal. The Historic Preservation Department of the Navajo Nation agreed with the Air Force determination that there would be no impacts to Navajo traditional cultural resources. A member of the public also sent a comment regarding the use of the area by sandhill cranes. Copies of these comments are presented in Appendix A (Comments on the Draft EA).

1.4.5 Differences Between the Draft and Final EA

As a result of comments received on the Draft EA, Section 3.1.2, Global Climate Change, and Hazardous and Toxic Materials and Waste subsections were revised in response to comments received from NMED; floodplains (under Water Resources) was updated to support a finding of no practicable alternative per the requirements of Executive Order 11988; the Cultural Resources subsection was also updated to reflect concurrence from NM SHPO. Section 3.3.2 was revised to reflect that no construction would occur and therefore no emissions would be generated from that activity (comment from NMED). Sections 3.7.1 and 3.7.2 were revised to include the results of an informal survey to identify raptor nesting near the proposed HLZ, as requested by the NMDGF.

1.4.6 Decision to be Made

Based on the analysis in this EA, the Air Force has made a final determination regarding the impacts of the Proposed Action and alternatives presented in this EA. Please see the decision document (i.e., the FONSI/FONPA) accompanying the EA.

1.5 REGULATORY COMPLIANCE

This EA was prepared in accordance with CEQ NEPA regulations (40 Code of Federal Regulations Parts 1500–1508 [40 CFR §§ 1500-1508]) as well as Air Force regulations at 32 CFR § 989 (*Environmental Impact Analysis Process*). The Air Force will comply with all other applicable laws, regulations, Executive Orders (EOs), and requirements associated with this Proposed Action. All necessary consultations will be completed before the final EA is published.

1.6 ORGANIZATION OF THE ENVIRONMENTAL ASSESSMENT

To summarize, Chapter 1 (this chapter) provides background information relevant to the Proposed Action and discusses its purpose and need. Chapter 2 presents the Proposed Action, No-Action Alternative, and alternatives eliminated from detailed consideration. Chapter 3 outlines and justifies resources evaluated in

this EA, identifies the specific region of influence (ROI) or affected environment for evaluating resource impacts, and describes baseline conditions (i.e., the conditions against which the potential impacts of the Proposed Action or alternatives are measured). The potential environmental impacts/consequences of the Proposed Action and No-Action Alternative are also presented in Chapter 3. In Chapter 4, analysis of cumulative effects is presented. Potential cumulative effects include evaluation of the Proposed Action and No-Action Alternative in relation to past, present, and/or future foreseeable actions within the ROI or affected environment. Other types of impacts, i.e., relationship between local short-term uses of the environment and enhancement of long-term productivity; irreversible or irretrievable commitment of resources; and energy requirements, are presented in Chapter 5. Chapter 6 contains references cited in preparation of this EA. Chapter 7 provides a list of EA preparers.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

CHAPTER 2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Air Force (32 CFR § 989) regulations implementing NEPA (40 CFR § 1502.14) require rigorous exploration and objective evaluation of all reasonable alternatives for a federal action. Each of the alternatives must be feasible, reasonable, and meet the stated purpose and need of the Proposed Action.

The following section details the elements of the Proposed Action; identifies alternatives that meet the purpose and need; and in accordance with CEQ regulations (40 CFR § 1502.14[d]), includes a No-Action Alternative that serves as a baseline against which environmental impacts of the Proposed Action and alternatives are measured.

2.1 PROPOSED ACTION

As discussed in Chapter 1, the Proposed Action is to acquire a low-dust HLZ for operations generated by aircrews flying CV-22, HH-60, and UH-1 aircraft from Kirtland AFB's 71 SOS and 512 RQS. The new low-dust HLZ would be acquired at such a distance from Kirtland AFB as to lessen wear and tear on engines and aircraft frames, maximize training time, and minimize transit time of maintenance ground crews in the event of aircraft breakdown.

2.1.1 Selection Standards

To identify the proposed action as well as any alternatives that could meet the purpose and need, the Air Force developed and applied the following Selection Standards:

- a new low-dust HLZ should be at a distance of no more than 200 nm (230 miles) round trip, or 100 nm (about 20 minutes flight time) each way from Kirtland AFB. This distance minimizes wear and tear on equipment, reduces fuel consumption, and decreases transit time
- located on a site where a willing landowner/land manager is available to provide access by lease;
- vegetated and resistant to heat generated from engines (i.e., lessen potential for wildfires);
- maintained by the land owner/land manager;
- located in an area with limited encroachment and light pollution;
- compatible with adjacent land uses;
- at least 800 ft by 800 ft (about 15 acres) in size to support both single and double aircraft operations at the same time;
- maintain the low-dust characteristics at no additional cost to the Air Force;
- clear of vertical obstacles higher than 20 inches within the 15 acres; and
- accessible by roads for ground crews to respond to aircraft maintenance issues.

Under the Proposed Action, no additional operations by the CV-22 or HH-60/UH-1 would be generated out of Kirtland AFB; rather those operations that are currently being flown to Piñon Canyon in Colorado to conduct low-dust training would now go to the newly established HLZ.

2.1.2 Identification of Alternatives

Based on the selection standards listed in Section 2.2.1, the Air Force evaluated potential sites within a 115-mile (100-nm) radius of Kirtland AFB and identified several sod farms to the east of the Manzano Mountains. In order to identify a landowner or manager who was willing to lease the land to the Air Force, numerous land owners and/or sod farm managers were contacted and asked if they would be interested in leasing land for use by Air Force CV-22 and HH-60/UH-1 aircraft. Only one land owner responded to the Air Force inquiry and that site, managed by Gardner Turfgrass, constitutes the Proposed Action for this proposal.

2.2 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

The Air Force considered creating a low-dust HLZ within the boundaries of Kirtland AFB. However, there are no suitable sites that meet the selection standards noted in Section 2.1.1. Any currently vegetated areas would have to be cared for by planting grass, as well as mowing, irrigating, and maintaining it (i.e., pesticides and herbicide applications). This level of effort would not meet the standards listed above and would require greater cost and responsibilities for the Air Force.

The Air Force also considered using a biodegradable chemical called TerraLOC which could potentially keep the dust down at existing HLZ locations in the state of NM. However, the existing HLZs that are within 100 nm of Kirtland AFB are located on lands where the land manager would be unlikely to approve the use of this chemical under existing lease terms.

2.3 PROPOSED HLZ ESTABLISHMENT

Located about 65 miles (56 nm) east of Kirtland AFB, the proposed low-dust HLZ would be subleased in McIntosh, NM (refer to Figure 1-1), in Torrance County. The area proposed for the HLZ meets the selection standards described in Section 2.1.1 and is the best alternative to meet the purpose and need presented in Chapter 1. This and the No-Action Alternative are carried forward and retained for analysis.

The land is privately owned but has been leased, managed, and maintained by Gardner Turfgrass for over 20 years for sod production; the 25 acres currently support Bermudagrass (Figure 2-1). The Air Force would sublease the 25 acres from Gardner Turfgrass, who would in turn continue to irrigate and maintain the Bermudagrass (Figure 2-2). To operate at this low-dust HLZ, no site improvements such as grading or construction would be required. No increased operations would be generated out of Kirtland AFB and neither personnel nor equipment would depart from the aircraft unless under repair or emergency situations.

2.4 PROPOSED HLZ OPERATIONS

As was mentioned above, CV-22 and HH-60 operations generated at Kirtland AFB/ABQ runways and landing areas would not change from existing conditions (AETC 2008). Low-dust HLZ training operations currently flown by CV-22 and HH-60 aircraft to and from Piñon Canyon in Colorado would no longer be a necessity but may still occur due to other training requirements. The majority of the flights, however, currently flown to Piñon Canyon would now go to the proposed HLZ in McIntosh, NM.

Due to their aircraft flight characteristics (i.e., slower and lower than most fixed wing aircraft), the CV-22 and HH-60 aircraft will fly under Federal Aviation Administration (FAA) visual flight rule (VFR) requirements (14 CFR § 91.155). For operations at the HLZ, aircraft will not use military training routes (typically established for aircraft flying at speeds in excess of 250 knots), but rather fly visually from the base to the site. VFR means that the pilot operating the aircraft uses visual cues from the landscape to navigate and operate safely around other air traffic. Therefore, cloud ceiling and flight visibility are the most important factors for safely operating aircraft during all phases of flight. Minimum weather conditions for ceiling and visibility for VFR flights are defined in 14 CFR § 91.155 and would be adhered to by aircrews. Information about existing conditions in the airspace is provided in Section 3.2, Airspace Management and Use.

Around Kirtland AFB/ABQ, the FAA has designated airspace as Class C and E (Figure 2-3) due to its being a moderately busy airport. Class C airspace is controlled by Air Traffic Control from the surface to 4,000 ft above the airport and Class E airspace is found at 1,200 ft above ground level and extends up to but does not include 18,000 ft mean sea level; no Air Traffic Control or radio communication is required for flights under VFR in Class E airspace (FAA 2008). Airspace in the region of McIntosh is designated by the FAA as uncontrolled or Class G; where Air Traffic Control has no authority over operations and flights by lower and slower aircraft are typically conducted under VFR requirements.

No new military training routes or low-altitude tactical navigational routes would be needed to accommodate travel of CV-22, HH-60, and UH-1 aircraft to and from the HLZ or for operating at the HLZ. Aircraft would depart Kirtland AFB and reach the proposed HLZ by either going through Tijeras Canyon (where Interstate 40 passes) or by crossing the Manzanos to the south and east of Kirtland AFB. Once the aircraft are over/through the mountains, they would fly VFR, at no higher than 1,000 ft above ground level (AGL) to the HLZ. Figure 2-3 provides an illustration of existing military training routes used by military aircraft; however, aircraft under this Proposed Action would not use these routes, see Section 3-2 for more information.

Approaching from the south, CV-22, HH-60, and UH-1 flight paths would take them over the Manzano Mountains to the south of Kirtland AFB. Again, they would fly VFR, at no higher than 1,000 ft above ground level. No new military training routes would be needed to accommodate travel to and from the HLZ or operations at the HLZ.

Proposed Tempo of Training

The Proposed Action would result in up to 96 CV-22 and 88 HH-60/UH-1 sorties at the HLZ. A sortie includes a single aircraft's activities from takeoff at the base, conducting training maneuvers, and returning to the base. For any of the aircraft, each sortie to the HLZ would average about 90 minutes; this includes flying to the HLZ, conducting about 60 minutes of training at and around the HLZ (including about 10 landings per sortie), and returning to the base. On an annual basis (Table 2-1), 80 percent of

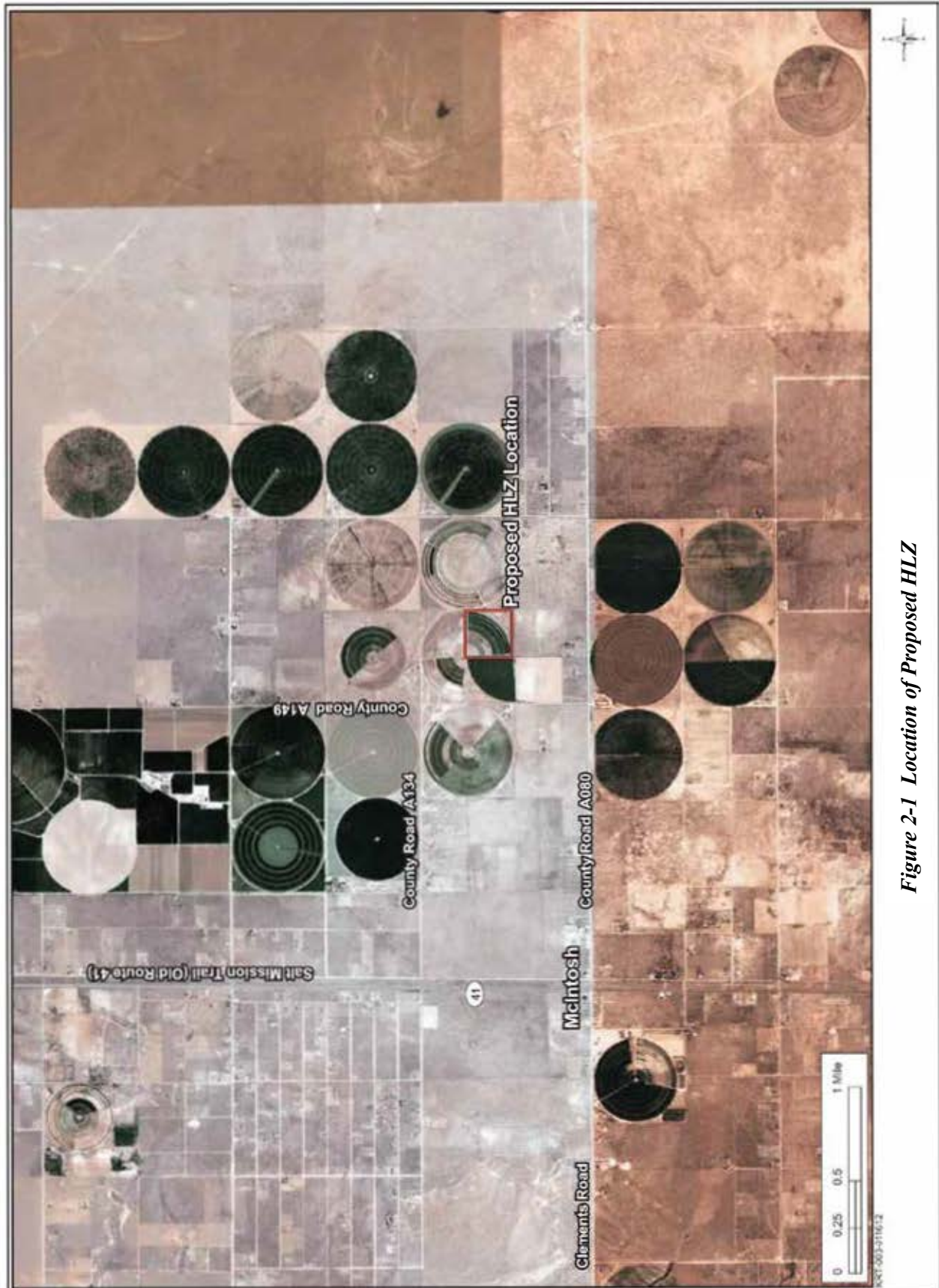
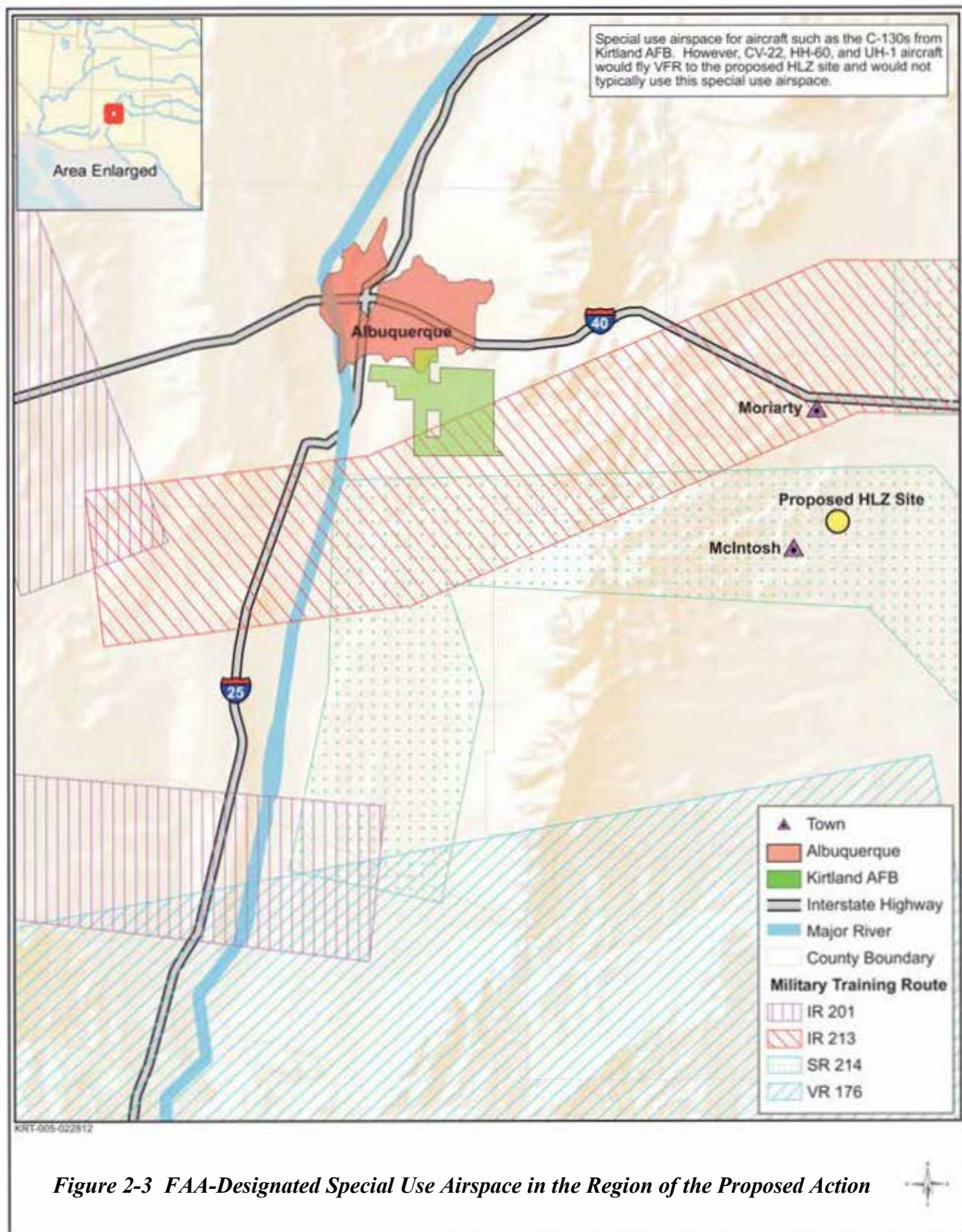


Figure 2-1 Location of Proposed HLZ



Figure 2-2 Turfgrass Area Proposed for HLZ



HLZ operations would occur during the “environmental day” hours between 7:00 a.m. and 10:00 p.m. and 20 percent during environmental night (10:00 p.m. to 7:00 a.m.). These hours are broken into environmental day and night for noise modeling purposes. While training tempo would vary from month to month, an average busy month for the CV-22 would involve approximately eight sorties, with no more than four sorties per 24-hour period, or eight per week; however, the total number of annual sorties would not exceed 96. About half of the 96 CV-22 sorties would involve a two-ship formation. For the HH-60/UH-1, there would be no more than two sorties over a 24-hour period, with an average of no more than seven sorties per month; however, total annual HH-60/UH-1 sorties would not exceed 88. CV-22s and the helicopters would not operate at the same time at the HLZ.

Table 2-1 Proposed Operational Tempo

Aircraft	Day	Night	TOTAL
CV-22	77	19	96
HH-60	66	17	83
UH-1	4	1	5

The 58 SOW will coordinate with Gardner Turfgrass by calling them prior to departing the base. Gardner will be given a general time for arrival and how long the aircraft intend to use the HLZ on that particular day. Gardner Turfgrass managers have indicated that they also have a radio that they can monitor in their building and trucks. The 58 SOW will obtain the frequency and can give them a radio call when they are 10 miles out from landing. In this manner Gardner will also be able to relay to the pilots any pertinent information that might have come up while they were enroute to the site (for instance if there is any sod operations or irrigation taking place). Since operations would be contained within the 25-acre site, no adjoining land owners or operations would be affected by operations at the HLZ.

Proposed Training

Table 2-2 outlines several types of aircrew training operations that would be conducted by aircraft at the HLZ. This is just an example of the types of training activities that could occur and were derived from a wide range of requirements found in the training syllabi for pilots (USAF 2011a, 2011b, 2009, and 2007).

Table 2-2 Training Operations at the HLZ

Approach and Landing Procedures – training in conversion to helicopter mode, traffic pattern, go-around, vertical and rolling landings, steep approach, and heavyweight operation.
Formation – training for flying, take-off, and landing with other aircraft, usually in a two-ship group.
Night Vision Goggle Sortie – conduct low-altitude flight, landing, and departing operations at night; for CV-22 training in both airplane and helicopter modes.
Alternate Insertion and Extraction – training in techniques for inserting/extracting troops. Insertion activities could include fast rope, or rope ladder over a precise spot.
Remote Operations – landings conducted in undeveloped areas.
Lift/Hoist Operations – operating equipment for transport of personnel, cargo, and equipment.

Training for flight engineers focuses on operation and manipulation of the full range of aircraft systems such as: cockpit management, communication, avionics, navigation, defensive countermeasures, crew alert, and vehicle management. Flight training includes aircraft performance, adverse weather procedures, emergency systems procedures, hoist operations, personnel recovery operations, and cargo/cargo sling operations.

Maintenance Activities

In the case of aircraft breakdown at the HLZ, maintenance ground crews (or Maintenance Recover Team [MRT]) would need to travel to the HLZ from Kirtland AFB to make the necessary repairs. According to the 58 SOW, the number of annual maintenance issues cannot be predicted with any level of accuracy; however, in 2011, an MRT was used more than 15 times for CV-22s. This does not mean, however, that this would be the number of times an MRT would go to the HLZ but this information is provided to illustrate that MRTs do maintain aircraft at the site and would do so under the Proposed Action. The type and number of vehicles used to do this can vary depending on the nature of the repair to be accomplished. Typically at a minimum there would be two, all-wheel drive, light trucks loaded with tools and parts for the job. If more personnel are needed to complete the task, than are able to ride in these trucks, a van would accompany the trucks. Should the repairs take longer than expected and the aircraft must remain on the ground in the HLZ overnight, another vehicle (most likely another light truck) would arrive on scene with Air Force Security Forces personnel to guard the aircraft until it returns to the base. All vehicles would access the HLZ by traveling on the existing compacted dirt roads.

Heavier vehicles, i.e. cranes and 5-ton trucks, may be required if a large aircraft component needs to be replaced. This is not typical and would only happen if the aircraft had to shut down in the HLZ because it could not make it to a nearby airfield or back to the base. Vehicles would travel on the adjacent compacted dirt roads.

2.5 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, 96 CV-22 and 88 HH-60/UH-1 operations would continue the 200-nm roundtrip to the low-dust HLZ in Piñon Canyon. The wear and tear on engines and aircraft frames would continue, efficiency of training would still be reduced due to extended transit times, travel time for maintenance crews would still be extensive, and fuel costs would remain unchanged.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

CHAPTER 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 ANALYSIS APPROACH

NEPA requires focused analysis of the areas and resources potentially affected by an action or alternative, and an EA should consider, but is not required to analyze in detail, those areas or resources not potentially affected by the proposal. Therefore, an EA should be succinct and to the point. Both description and analysis in an EA should provide sufficient detail and depth to ensure that the agency (i.e., the USAF) has taken a hard look at the proposal and the potential impacts it might have on the human and natural environment. NEPA also requires a comparative analysis that allows decision makers and the public to differentiate among the alternatives.

3.1.1 Resources Analyzed

Table 3.1-1 presents the potential resources that could be analyzed in this EA. A total of 15 resource categories were evaluated for their potential to be impacted by the Proposed Action: 1) air quality; 2) utilities (power, communications, sewage, and solid waste); 3) transportation; 4) visual and recreational resources, 5) socioeconomics (including economics, environmental justice, provisions for the handicapped, and protection of children); 6) cultural and traditional resources; 7) water resources (including wetlands, floodplains, surface and storm waters, and water quality and availability); 8) geological resources (geology, topography, and soils); 9) hazardous and toxic materials and waste; 10) global climate change; 11) airspace management and use; 12) aircraft and public safety; 13) land management and use; 14) noise; and 15) biological resources (including terrestrial vegetation, wildlife, and sensitive species). Consideration was then given to each resource, and it was noted whether the resource would be potentially impacted by implementing the Proposed Action. If a resource was determined to have negligible or no impacts it was not considered further for analysis; justification for not carrying a resource forward is discussed following the table.

Table 3.1-1 Resources Analyzed to Determine Impacts and Need for Further Evaluation

Categories/Resources	Elements of Proposed Action and Anticipated Impact	
	<i>Operations</i>	<i>Sublease</i>
Global Climate Change	Negligible	None
Utilities		
Power	None	None
Communications	None	None
Sewage	None	None
Solid Waste	None	None
Transportation	None	None
Visual and Recreational Resources	None	None
Socioeconomics		
Economics (demographic, economic, housing)	None	Negligible

Table 3.1-1 Resources Analyzed to Determine Impacts and Need for Further Evaluation

Categories/Resources	Elements of Proposed Action and Anticipated Impact	
	<i>Operations</i>	<i>Sublease</i>
Environmental Justice	None	None
Provision for the Handicapped	None	None
Protection of Children	None	None
Cultural and Traditional Resources	None	None
Water Resources		
Wetlands	None	None
Floodplains	Negligible	Negligible
Surface and Storm Water	None	None
Water Quality and Availability	None	None
Geological Resources		
Topography	None	None
Geology	None	None
Soils	Negligible	None
Hazardous and Toxic Materials and Waste	None	None
Airspace Management and Use	Minor	None
Air Quality	Minor	None
Aircraft and Public Safety	Minor	None
Land Management Use	Minor	Minor
Noise	Minor	None
Biological Resources		
Vegetation	Negligible	None
Wildlife	Minor	None
Special Status Species	Minor	None

3.1.2 Resources Eliminated from Further Analysis

NEPA and CEQ regulations, as well as USAF procedures for implementing NEPA, specify that an EA should focus only on those resources potentially subject to impacts. In addition, the level of analysis applied to any given resource should be commensurate with the level of impact anticipated for that resource. Applying these guidelines, the following resource areas were not analyzed in this EA: global climate change, utilities, transportation, visual and recreational resources, socioeconomics (including economics, environmental justice, provision for the handicapped, and protection of children), cultural and traditional resources, water resources (including wetlands, floodplains, surface and storm water, and water quality and availability), geological resources (including topography, geology, and soils), and hazardous and toxic materials and waste. It is anticipated that impacts would be negligible or nonexistent to these resources.

Global Climate Change. Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These emissions are generated by both natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the earth's temperature. To minimize GHG impacts, federal agencies and installations are required to comply with federal climate change policies including: EO 13423 (signed January 2007), *Strengthening Federal Environmental, Energy, and Transportation Management*; the

Federal Energy Policy Act requiring federal agencies to increase the use of renewable sources by 3 percent between 2007 and 2009, 5 percent between 2010 and 2012, and by 7.5 percent for 2013 and beyond; and EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (signed October 2009), which provides for early strategic guidance to federal agencies in the management of GHG emissions. On February 18, 2010, the CEQ released *NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*. This Guidance suggests that proposed federal actions that would reasonably be anticipated to emit 25,000 metric tons or more of carbon dioxide equivalent (CO₂e) GHG emissions should be evaluated by quantitative and qualitative assessments. While not a specific threshold of significance, this Guidance suggests that this be considered a minimum level for consideration in NEPA documentation.

Under baseline conditions, aircraft produce 2,249 metric tons per year of CO₂e (well below the guidance recommended) conducting operations to, from, and at the HLZ in Colorado; under the Proposed Action, aircraft would generate about 1,905 metric tons per year going to and from and operating at the new HLZ in New Mexico. In total, there would be a decrease of 344 metric tons of CO₂e when compared to baseline conditions. As no construction activities are contemplated as part of the Proposed Action or alternatives, no construction-related GHG emissions will occur. Because there would be decreases of GHG emissions and global climate change would not be affected, this resource was not carried forward for further analysis.

Utilities. The Proposed Action would not affect utility (power, communications, sewage, and solid waste) availability or service. There would be no need to provide power, communication, sewage, or solid waste services in order to implement the Proposed Action; therefore, no impacts would occur. No further analysis of utility resources was carried forward in this EA.

Transportation. Under the Proposed Action, maintenance crews and emergency personnel would use existing roads on an infrequent basis (see Section 2.4 Maintenance Activities for clarification of frequency of road use). No road improvements would be required to allow access to the proposed HLZ site. This resource would experience no impacts; therefore, it was not carried forward for further analysis.

Visual and Recreational Resources. Implementing the Proposed Action would have no impacts on the visual character of the landscape surrounding the Gardner Turfgrass sod farm as no construction or other permanent physical changes would be implemented. While the Salt Mission Trail (adjacent to state road 41 and a State-designated scenic by-way) is located near the proposed HLZ, its scenic quality would not be affected by the infrequent flights undertaken by these aircraft. No recreational pursuits, other than hunting, occur on or around this site. The temporary and infrequent aircraft operations that would occur at the HLZ would not conflict with any hunting pursuits; therefore, no impacts to either visual or recreational resources would occur. This resource category was not carried forward for further analysis.

Socioeconomics (Economics, Environmental Justice, Provision for the Handicapped, and Protection of Children). *Economics:* implementation of the Proposed Action would result in income generated from subleasing the site; however, this amount would not generate any negligible changes to the regional

economy. Executive Order 12898, *Environmental Justice*, requires analysis of the potential for a federal action to cause disproportionate health and environmental impacts on minority and low-income populations. Areas with noise levels exceeding 65 decibels Day-Night Average Sound Levels around airfields or with perceptible changes in noise levels in the airspace were analyzed. Under this proposal, noise generated by aircraft operations at the HLZ would not exceed the standards outlined above and noise levels in the airspace would not perceptibly change to disproportionately affect low-income or minority populations (see Section 3.2 for noise-specific discussion).

Provision for the Handicapped: this action does not involve any facilities requiring access by the handicapped and operations would only be conducted by CV-22, HH-60, and UH-1 aircrews and maintenance crews; therefore, no provisions for the handicapped would be required. *Protection of Children:* the nearest schools are in Estancia and Moriarty, approximately 7.5 and 9 miles respectively, from the proposed HLZ and would not be affected by overflight noise. Pilots must comply with FAA regulations (Section 91.119) whereby aircraft must avoid congested areas of a city, town, or settlement or any open-air assembly of people by 1,000 ft above the highest obstacle within a horizontal radius of 2,000 ft of the aircraft. Outside of congested areas, aircraft must avoid persons, vessels, vehicles, or structures by 500 ft. In summary, no impacts to the regional economy, low-income, minority, and handicapped populations, or children would occur if the Proposed Action were implemented; therefore, this resource and associated categories were not carried forward for further analysis.

Cultural and Traditional Resources. Cultural resources are defined as archaeological, architectural, or traditional. Archaeological resources include prehistoric archaeological sites through recent 20th century historical components. All unevaluated resources are treated as eligible for the National Register until determined otherwise. Architectural resources include historic properties and structures, which are included in, or eligible to be included in, the National Register of Historic Places. Section 106 of the National Historic Preservation Act, as amended, requires federal agencies to consider the effects of their actions on historic properties before undertaking a project. Traditional resources are associated with specific Indian traditional resources or sacred sites or areas on the proposed HLZ site. No impacts to either cultural or traditional resources are anticipated. This conclusion is justified because of several factors: archaeological resources would not be affected because no soil disturbance would occur other than what is currently done through sod cultivation and compaction due to farming equipment, and no eligible or potentially eligible properties are located at or adjacent to the proposed HLZ. The New Mexico State Historic Preservation Officer concurred with the Air Force's finding that no historic properties would be affected (see May 31, 2012 concurrence stamp on the April 25 letter sent by the Air Force, Appendix A: Comments on Draft EA).

Project specific government-to-government coordination with federally-recognized Indian Tribes was undertaken to identify any potential for impacts. In April 2012, 26 Pueblos and Nations, identified as potentially having an interest or cultural ties to the area of the Proposed Action, were sent letters describing the Proposed Action (via registered mail; see Appendix A: Mailing List and Sample Government to Government Correspondence). One response was received from the Santa Ana Pueblo in

New Mexico; the Pueblo indicated no concerns regarding the Proposed Action. The same 26 Pueblos and Nations were sent the Draft EA in June 2012; by the end of the 30-day review period one letter was received from the Historic Preservation Department of the Navajo Nation indicating they agreed with the Air Force determination of no impacts Navajo traditional cultural resources (see Appendix A, Comments on Draft EA). No further correspondence was received on the Draft EA from the other 25 Pueblos and Nations.

Water Resources. There are no wetlands on the proposed HLZ. However, the proposed HLZ site is located within Special Hazard Flood Area-Zone A (Flood Hazard Boundary Map 350133 0008 B, Federal Emergency Management Agency [FEMA] 2012), corresponding to the 100-year floodplain. According to FEMA, Zone A was determined using approximate methodologies; detailed hydraulic analyses have not been performed and no base flood elevations or flood depths are identified (FEMA 2012). Per Executive Order 11988, federal actions proposed within or affecting the 100-year floodplain require analysis to determine whether there are practicable alternatives to locating within a floodplain. For this Proposed Action, given that the site proposed for the HLZ is the only site that meets the operational and locational criteria and is owned/controlled by a landowner willing to allow access to the Air Force for that purpose, there is no other practicable alternative available.

No changes in stormwater runoff or percolation into the soils are anticipated and since no construction would occur no National Pollutant Discharge Elimination System permits would be required. The site is presently irrigated from wellheads located adjacent to the 25-acre proposed HLZ, and water use (irrigation) of the sod within the 25-acre sublease would not be affected; therefore, no changes to water resources. This resource category will not be carried forward for further analysis.

Geological Resources. As there is no construction associated with the Proposed Action, no impacts to geology and topography are expected; the site was chosen for its lack of relief (flat landing surface) and resistance to potential dust generation (sod farm). While soil compaction could occur, it would differ little from that currently caused by farming equipment. Therefore, no further analysis of geological resources is required.

Hazardous and Toxic Materials and Waste. The Proposed Action would not result in the creation of any hazardous or toxic materials or waste streams at the HLZ (potential impacts due to unforeseen accidents is addressed under aircraft safety, Section 3.3). All routine aircraft maintenance activities (and the associated materials and wastes) would continue at Kirtland AFB. At the HLZ, repairs due to unforeseen breakdowns would be conducted on-site by maintenance crews to ensure the aircrafts' viability for flight. If there are any unforeseen discharges, all Ground Water Quality Bureau discharge notification requirements would be followed. Once flight-worthy, the aircraft would be flown back to the base to complete the requisite repairs (however, depending on the severity of the repair needed, the aircraft may be flown to the nearest developed airfield to complete repairs). No Environmental Restoration Program (ERP) sites are located at or adjacent to the proposed HLZ site. Any materials used or wastes generated outside of Kirtland AFB would be brought back to the base for proper handling,

storage, and disposal. Operations at the base would not incur any changes to the type or amount of hazardous or toxic materials used or wastes generated and disposed.

An Environmental Baseline Survey (EBS) was conducted in the Fall of 2011, and the site revisited in May 2012, to:

- Document the nature, magnitude, and extent of any environmental contamination of the proposed 25-acre HLZ site.
- Identify potential environmental contamination liabilities associated with the proposed HLZ site.
- Develop sufficient information to assess the health and safety risks and to ensure adequate protection for human health and the environment related to the proposed HLZ site.
- Provide the basis for notice, when required under Section 120(h)(1) of the Comprehensive Environmental Resources, Compensation, and Liability Act, as to the disposal of a hazardous substance on the proposed HLZ site.

The results of the surveys found that there are no known or undisclosed environmental impacts at the proposed HLZ site. In summary, because no hazardous or toxic materials or wastes would be stored or disposed of at the site and all handling would occur according to existing rules and regulations, as well as there being no past or present environmental conditions at the site to preclude subleasing it, this resource was eliminated from further analysis.

3.1.3 Scope of Impact Analysis

The overall affected environment or region of influence (ROI) may differ in geographic scope depending on the resource being analyzed. For instance, the ROI for noise impacts includes noise generated at the site itself as well as areas underlying the potential flight paths of the aircraft, while the ROI for land use comprises the site itself and extends about a quarter of a mile where noise could affect land uses. This EA analyzes potential environmental effects for the following resources: airspace management and use, aircraft and public safety, land use, noise, and biological resources. The following identifies each resource, defines the affected environment for that resource, presents baseline environmental conditions, and follows with an analysis of the potential environmental impacts/ consequences of the Proposed Action.

3.2 AIRSPACE MANAGEMENT AND USE

The safe, orderly, and compatible use of the nation's airspace is made possible through a system of flight rules and regulations, airspace management actions, and air traffic control procedures, just as use of the nation's highway system is governed by traffic laws and rules for operating vehicles. The national airspace system is designed and managed to protect aircraft operations around most airports, along air traffic routes connecting these airports, and within special areas where activities such as military training are conducted. The FAA has the overall responsibility for managing the airspace system and accomplishes this through close coordination with state aviation and airport planners, military airspace managers, and other entities.

Airspace is specifically designated and managed for military training to ensure that operations within these airspace units occur without exposing civil aviation users, other military aircrews, and the general public to hazards associated with military training and operations.

3.2.1 Affected Environment

There are two categories of airspace or airspace areas, regulatory and non-regulatory. Within these two categories, there are four types of airspace: controlled, special use, other, and uncontrolled. *Controlled airspace* is airspace of defined dimensions within which air traffic control service is provided to Instrument Flight Rule (IFR) flights and to VFR flights in accordance with the airspace classification (FAA 2008). Controlled airspace is categorized into five separate classes: Classes A through E (Figure 3.2-1). These classes identify airspace that is controlled, airspace supporting airport operations, and designated airways affording *en route* transit from place-to-place. The classes also dictate pilot qualification requirements, rules of flight that must be followed, and the type of equipment necessary to operate within that airspace. *Uncontrolled airspace* is designated Class G airspace.

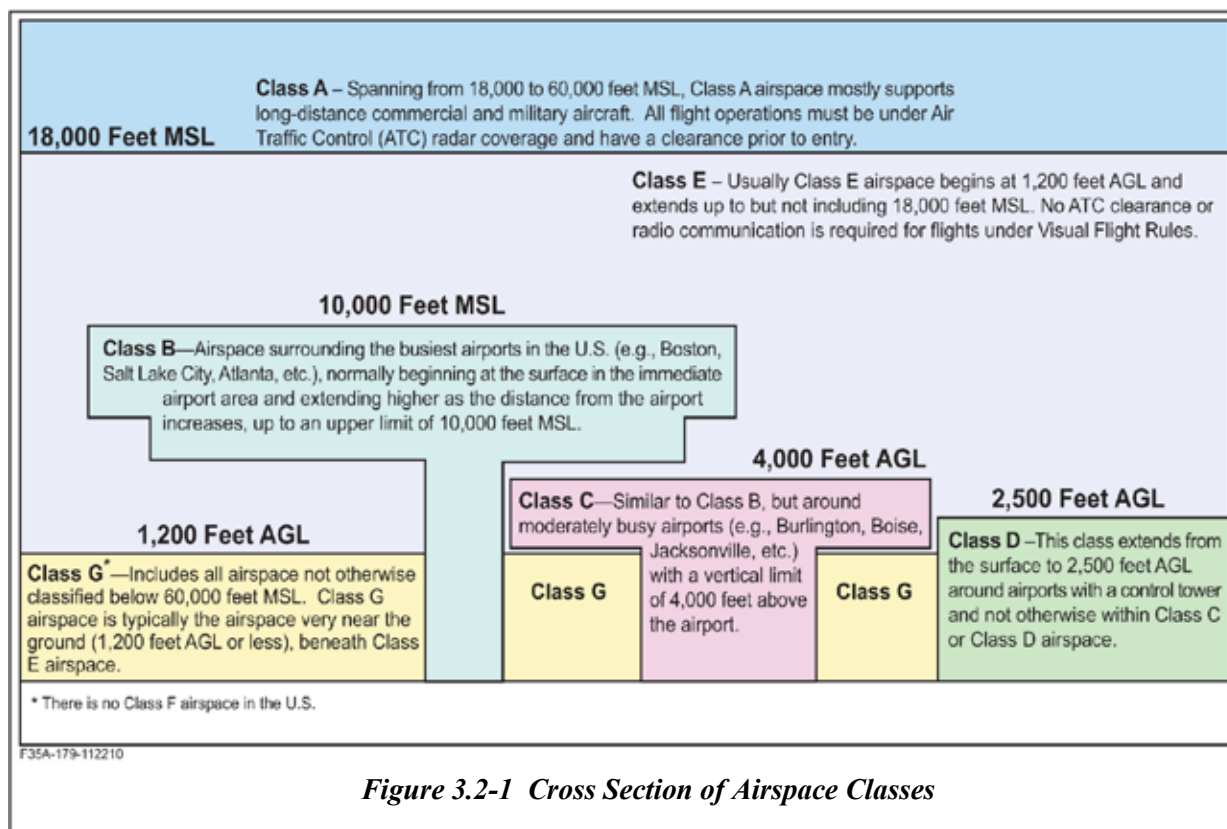
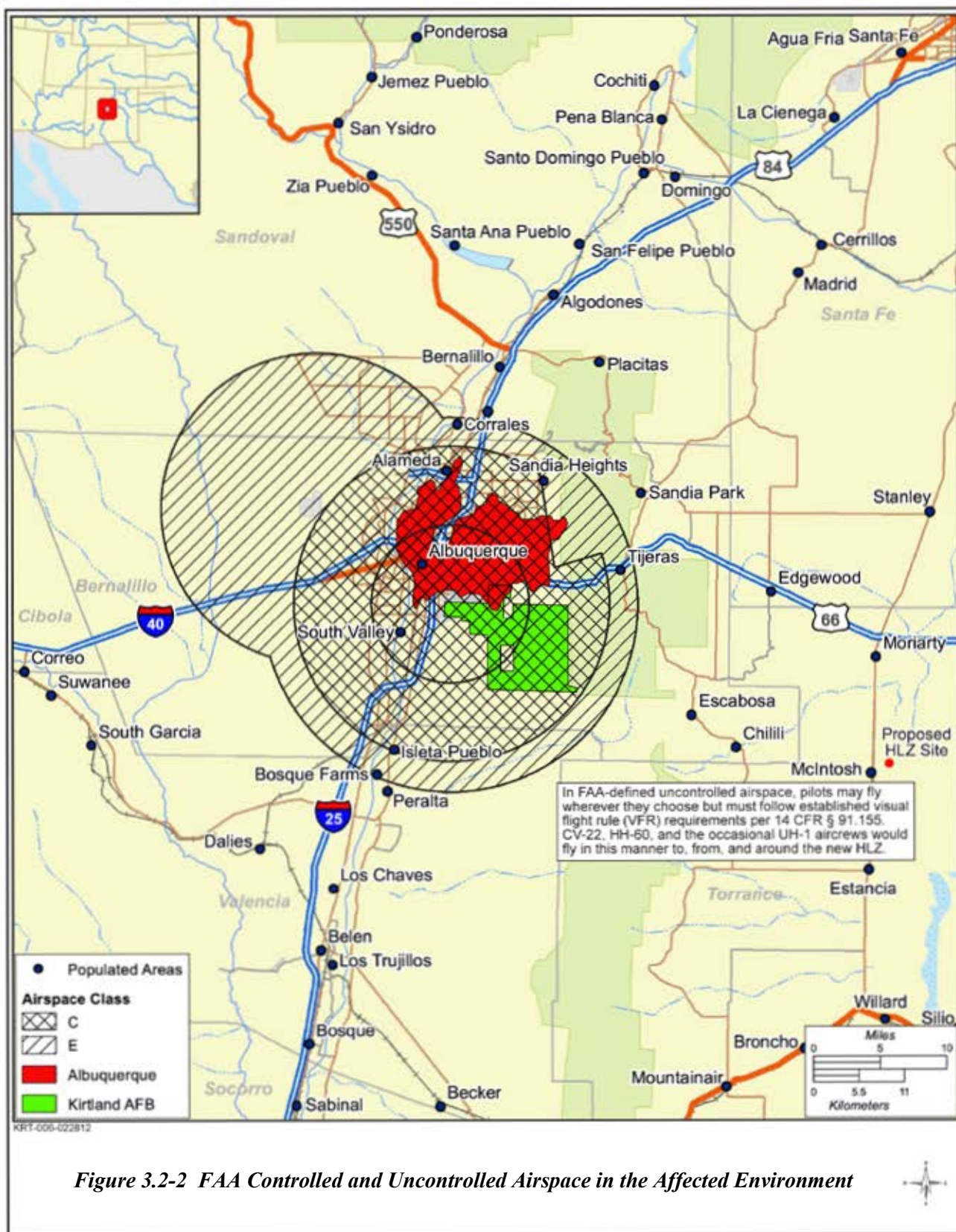


Figure 3.2-1 Cross Section of Airspace Classes

The proposed HLZ lies within Class G, uncontrolled airspace, where pilots may fly VFR thereby not having to obtain clearance from air traffic control or maintain radio communication. The majority of airspace both east and west of the site is designated Class G by the FAA. The nearest controlled airspace (Class C and E) is that surrounding Albuquerque International Sunport (Figure 3.2-2).



Airspace designated for military operations is known as Special Use Airspace (SUA). It has defined dimensions wherein activities must be confined because of their nature, or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. SUA includes Prohibited Areas, Restricted Areas, Military Operations Areas, Warning Areas, Alert Areas, National Security Areas, and Controlled Firing Areas. Other airspace includes advisory areas, temporary flight limitations, areas designated for parachute jump operations, military training routes (MTRs), aerial refueling tracks, and Air Traffic Controlled Assigned Airspace.

MTRs are flight corridors established for low-altitude navigation and training. There are two types of MTRs: instrument routes (IR) and visual routes (VR). MTR locations are depicted on aeronautical charts and detailed descriptions of the routes are provided in U.S. DoD Flight Information Publication AP/1B. Similar to MTRs are slow routes (SRs) which are low-altitude training routes used for military air operations at or below 1,500 ft AGL at airspeeds of 250 knots or less. The 58 SOW aircraft also use Low Altitude Tactical Navigation (LATN) routes which do not have published floor or ceiling altitudes but have been surveyed for *en route* flight safety and cleared for use by the 58 SOW from 50 to 200 ft AGL. Refer to Figure 2-3 for an illustration of the MTRs used by the 58 SOW.

3.2.2 Environmental Consequences

Impacts would be considered significant if FAA-regulated airspace management procedures could not be adhered to, if new airspace would need to be created, or if the Proposed Action would introduce flight operations that would conflict with other civilian, commercial, and military use of the airspace.

Proposed Action

No increase in total operations generated at Kirtland AFB would occur under the Proposed Action. The CV-22, HH-60s, and UH-1s would operate in the same airfield environment and would follow established local approach and departure patterns. The 58 SOW pilots would continue to operate under the same rules and regulations as they currently do. The 58 SOW pilots' training requirements would remain the same, with the only change being where they conduct low-dust training and the associated flight paths to, and landings at, the proposed low-dust HLZ.

No changes to airspace designations would occur nor would new airspace need to be created. Operations within MTRs would not change from the activities described in the 2000 Final EA for the Proposed Beddown of the CV-22 and Plus-Up of the 58 SOW (USAF 2000) or as presented in the 2008 Supplemental EA for 58 SOW Operations (USAF 2008a), and therefore, the analyses and impact conclusions presented in those documents are incorporated by reference.

As mentioned in Chapter 2, CV-22, HH-60, and UH-1 aircraft will use VFR when traveling from Kirtland AFB to the proposed HLZ. This means that they would not use MTRs to travel to and from the HLZ. Rather they would take any flight path they chose and adhere to all FAA-designated flight rules for safe operation of aircraft flying VFR (14 CFR § 91.155). For instance, they may depart to the north and follow Interstate 40 (refer to Figure 2-3) and after passing over the Manzano Mountains, would continue southeast to the proposed HLZ. Another approach aircraft could take to the proposed HLZ would entail

flying south of Kirtland AFB, passing over the Manzano Mountains, and continuing to the northeast following a flight path dependent on wind direction and speed, as well as local weather conditions.

Pilots would continue to comply with FAA regulations and avoid congested areas of a city, town, or settlement or any open-air assembly of people by 1,000 ft above the highest obstacle within a horizontal radius of 2,000 ft of the aircraft. Outside congested areas, pilots must avoid persons, vessels, vehicles, or structures by 500 ft. When compared to baseline conditions there would be negligible impacts to airspace management and use. The Proposed Action would follow all FAA-regulated airspace management procedures, no new airspace would need to be created, and there would be no increases in flight operations to conflict with existing civilian, commercial, and military use of the regional airspace.

No-Action Alternative

Under the No-Action Alternative, CV-22, HH-60, and UH-1 operations would continue at the low-dust HLZ at Piñon Canyon in southeast Colorado. Baseline aircraft activities would remain unchanged and wear and tear on the aircraft frame and engines would continue, as well as the need to traverse long distances to the Piñon Canyon HLZ.

3.3 AIR QUALITY

The Clean Air Act requires the U.S. Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. There are primary and secondary standards under the NAAQS. Primary standards set limits to protect public health, including “sensitive” populations. Secondary standards set limits to protect public welfare, including protection from decreased visibility, damage to animals, crops, vegetation, and buildings. Areas that are in violation of the NAAQS are designated non-attainment or in maintenance for attainment of criteria pollutants.

There are six criteria pollutants found under the NAAQS: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM) at 10 and 2.5 micrometers (PM₁₀ and PM_{2.5}), and Lead (Pb); ozone precursors include volatile organic compounds (VOCs) and nitrogen oxides (NO_x). The following presents five of the six criteria pollutants; lead as well as hazardous air pollutants are not included in this analysis because they are primarily generated by stationary industrial activities with mobile sources such as aircraft generating very small amounts.

3.3.1 Affected Environment

The ROI (or affected environment) includes operations that take place at the base, along the route traveled to the HLZ, and at the HLZ itself. The following examines these three ROIs and presents baseline emissions for each (Table 3.3-1). Emissions at the base are generated by stationary sources, mobile sources (e.g., aircraft), and by aerospace ground equipment. Kirtland AFB is located in Bernalillo County, which lies within Air Quality Control Region (AQCR) 152 (40 CFR § 81.332), an area in maintenance for CO. Table 3.3-1 emissions were derived from information provided in the 2000 Environmental Assessment (EA) and 2008 Supplemental EA for basing the CV-22 and increasing other aircraft

operations at Kirtland AFB. In these EAs, 945 CV-22 operations (AETC 2008) and 2,784 HH-60/UH-1 operations (AETC 2000) were evaluated and serve as the baseline from which to make comparison. Also as part of the 2000 EA, an air conformity applicability analysis was undertaken due to the CO maintenance status. The analysis showed that emissions generated by increased aircraft and operations would not move the area out of maintenance status or deteriorate regional air quality (AETC 2000).

Emissions reflected in the 90 minutes in transit to and from the HLZ from Kirtland AFB assumed that 50 percent of the flight time would occur in Las Animas County (AQCR-38, 40 CFR § 81.306) and 50 percent could occur in any number of counties in New Mexico and/or Colorado, which are in attainment status for all criteria pollutants of concern. Because all three of these aircraft can take any route they wish across country it was determined to use a conservative (or “worst case” scenario) for determining transit emissions. Therefore, Mora County (AQCR-154, 40 CFR § 81.332) in New Mexico was selected for the other 50 percent of flight time. This county was chosen because it is the smallest in size and has the least amount of total criteria pollutants when compared to the other counties the aircraft could traverse. Operations at the HLZ include 30 minutes of landings, takeoffs, and hovering (Appendix C contains the emissions calculations associated with this analysis). As the data indicate, in no instances do emissions contribute more than 1.7 percent to the regional AQCRs.

Table 3.3-1 Baseline Emissions Generated by CV-22 and HH-60/UH-1 HLZ Operations

Location	Criteria Pollutants in tons per year					
	VOCs	CO	NO _x	SO ₂	PM10	PM2.5
Operations at the Base*						
Bernalillo County	22,154	111,107	15,967	280	60,847	<60,847
Kirtland AFB Baseline	28.83	211.84	29.24	1.54	11.44	<11.44
Percent Regional Contribution	0.13%	0.19%	0.18%	0.55%	0.02%	0.02%
Emissions in Transit to HLZ**						
Las Animas County, CO	1,319	6,673	2,792	15	2,876	599
Baseline Transit Emissions	0.03	0.32	2.19	0.07	0.40	0.385
Percent Regional Contribution	0.002%	0.005%	0.078%	0.467%	0.014%	0.064%
Mora County, NM	638	4,801	769	6	7,687	802
Baseline Transit Emissions	0.03	0.32	2.19	0.07	0.40	0.385
Percent Regional Contribution	0.004%	0.007%	0.285%	1.167%	0.005%	0.048%
Emissions at the HLZ**						
Las Animas County, CO	1,319	6,673	2,792	15	2,876	599
Baseline	0.08	1.25	7.09	0.25	0.88	0.97
Percent Regional Contribution	0.006%	0.019%	0.2547%	1.667%	0.031%	0.162%

Sources: AETC 2000, USEPA AirData 2012.

Notes: *Emissions at Kirtland AFB reflect all stationary and mobile sources presented in the 2000 CV-22 Basing EA and associated air conformity applicability analysis.

**County emissions derived from USEPA website and reflects 2008 data; mobile source emissions include the CV-22 and HH-60/UH-1 aircraft.

3.3.2 Environmental Consequences

Impacts would be considered significant: 1) around the base if emissions would affect the maintenance status of CO within AQCR-152; 2) along the transit route if emissions would change the attainment status in the AQCRs or represent more than 10 percent of total regional emissions (measured at the county

level) in Las Animas County, Colorado (AQCR-38), and Mora and Torrance Counties, New Mexico (both in AQCR-154); or 3) at the HLZ if emissions would alter the attainment status for either AQCR-38 or AQCR-154, or represent a contribution exceeding 10 percent of the regional emissions in Torrance County, New Mexico. In addition to emissions from air operations, emissions from ground operations and site modifications (such as construction) must also be considered as appropriate. There is no construction contemplated for the Proposed Action or alternatives, so emissions related to those activities are not addressed.

Proposed Action

If the Proposed Action were implemented, the number of CV-22, HH-60, and UH-1 operating at and immediately around Kirtland AFB would not change. If operations at the base were to change then an air conformity applicability analysis would be required. For this Proposed Action, however, no changes in the total number of operations generated at and around Kirtland AFB would change; the only difference is that 96 of the 945 CV-22 and 88 of the 2,784 HH-60/UH-1 operations would fly to the proposed new low-dust HLZ in New Mexico rather than to the current HLZ site in Colorado. Therefore, no changes to existing levels of emissions would occur and these aircraft would still generate less than 1 percent of any of the criteria pollutants and not present a regional contribution to change the current CO maintenance status in AQCR-152 (Table 3.3-2).

Table 3.3-2 Projected Emissions Generated by CV-22 and HH-60/UH-1 HLZ Operations

Location	Criteria Pollutants in tons per year					
	VOCs	CO	NO _x	SO ₂	PM ₁₀	PM _{2.5}
<i>Operations at the Base*</i>						
Bernalillo County	22,154	111,107	15,967	280	60,847	<60,847
Projected	No Change	No Change	No Change	No Change	No Change	No Change
Percent Regional Contribution	0.13%	0.19%	0.18%	0.55%	0.02%	0.02%
Change (tons/year)	0	0	0	0	0	0
<i>Emissions in Transit to HLZ**</i>						
Las Animas County, CO	1,319	6,673	2,792	15	2,876	599
Baseline Transit Emissions	0.03	0.32	2.19	0.07	0.40	0.385
Percent Regional Contribution	0.002%	0.005%	0.078%	0.467%	0.014%	0.064%
Projected	638	4,801	769	6	7,687	802
Change (tons/year)	-0.03	-0.32	-2.19	-0.07	-0.40	-0.39
Mora County, NM	0.004%	0.007%	0.285%	1.167%	0.005%	0.048%
Baseline Transit Emissions	0.03	0.32	2.19	0.07	0.39	0.37
Percent Regional Contribution	0.004%	0.007%	0.285%	1.167%	0.005%	0.046%
Projected	0	0	0	0	0	0
Change (tons/year)	-0.03	-0.32	-2.19	-0.07	-0.40	-0.39
Torrance County, NM	1,563	11,366	5,173	90	18,316	2,025
Baseline Transit Emissions	0	0	0	0	0	0
Projected	0.05	0.83	4.39	0.17	0.52	0.50
Percent Regional Contribution	0.003%	0.007%	0.085%	0.189%	0.003%	0.025%
Change (tons/year)	+0.03	+0.83	+4.39	+0.17	+0.52	+0.50

Table 3.3-2 Projected Emissions Generated by CV-22 and HH-60/UH-1 HLZ Operations

Location	Criteria Pollutants in tons per year					
	VOCs	CO	NO _x	SO ₂	PM ₁₀	PM _{2.5}
Emissions at the HLZ**						
Las Animas County, CO	1,319	6,673	2,792	15	2,876	599
Baseline	0.08	1.25	7.09	0.25	0.88	0.97
Percent Regional Contribution	0.006%	0.019%	0.254%	1.667%	0.031%	0.162%
Projected	0	0	0	0	0	0
Change (tons/year)	-0.08	-1.25	-7.09	-0.25	-0.88	-0.97
Torrance County, NM	1,563	11,366	5,173	90	18,316	2,025
Baseline	0	0	0	0	0	0
Projected	0.05	0.93	6.97	0.24	0.81	0.78
Percent Regional Contribution	0.003%	0.007%	0.085%	0.189%	0.003%	0.024%
Change (tons/year)	+0.05	+0.93	+6.97	+0.24	+0.81	+0.78

Sources: AETC 2000, USEPA AirData 2012.

Notes: *Emissions at Kirtland AFB reflect all stationary and mobile sources presented in the 2000 CV-22 Basing EA and associated air conformity applicability analysis.

**County emissions derived from USEPA website and reflects 2008 data; mobile source emissions include the CV-22 and HH-60/UH-1 aircraft.

Under the Proposed Action, transit time assumed 60 minutes and 30 minutes for training at the HLZ. As depicted in Table 3.3-2 above, emissions generated by transiting to and from the HLZ would represent less than 1 percent increase in any of the criteria pollutants. This falls well below the 10 percent threshold and would not change the attainment status for any of the pollutants in AQCR-154 if the Proposed Action were implemented. The 30 minutes spent at the HLZ in Torrance County would represent less than 1 percent to regional emissions. Again, well below the 10 percent threshold established for significance. In terms of emissions associated with operations to, from, and at the Colorado low-dust HLZ, there would be net decreases in all criteria pollutants. In summary, the regional air quality would not be degraded at the base, in the airspace supporting operations to and from the proposed HLZ, and at the HLZ; all criteria pollutants would contribute far less than 10 percent to the regional emissions in any of the counties; and there would be no changes to the CO maintenance status in AQCR-152 (the only area with attainment issues).

No-Action Alternative

Under the No-Action Alternative, 58 SOW operations would continue at the low-dust HLZ in southeast Colorado. Emissions generated by these operations would remain at the levels presented under baseline. They would not change the CO maintenance status in AQCR-152, nor would they contribute 10 percent or more of any criteria pollutant.

3.4 AIRCRAFT AND PUBLIC SAFETY

3.4.1 Affected Environment

The safety analysis contained in the following section addresses issues related to the health and well-being of both military personnel and civilians in the vicinity of the proposed HLZ. Specifically, this

section provides information on hazards associated with aviation safety (aircraft mishaps and Bird/Wildlife-Aircraft Strike Hazard [BASH]). The primary safety concern with regard to military training flights is the potential for aircraft mishaps (i.e., crashes) to occur, which could be caused by mid-air collisions with other aircraft or objects, weather difficulties, mechanical failures, pilot error, or BASH.

Past safety concerns regarding fire potential to surfaces under the CV-22 during landing operations have been examined by both the Department of the Navy (DoN) and the scientific community (DoN 2008). Available data indicate that with exhaust deflectors operating at normal capacity, CV-22 exhaust should not heat the ground to a temperature high enough to support combustion of plant-based materials. This conclusion is also consistent with the MV-22 aircraft (the U.S. Marine Corps [USMC] version), which reached operational status in 2004 and has more than 73,000 operational flying hours. The combined test flight and operational hours of the CV-22 and MV-22 aircraft to numerous unprepared landing zones at bases and ranges throughout the U.S. (including sites in Alabama, Arizona, California, Florida, Maryland, Nevada, New Mexico, North Carolina, and Virginia) have resulted in only one documented grass fire. This grass fire was attributed to the exhaust of a CV-22 about 10 miles southwest of Troy, Alabama, and the probable cause was determined to be an interruption in the operation of the exhaust deflector system. There have been no fires documented with the exhaust deflectors operating normally.

The high moisture content of the proposed HLZ ground surface area (Bermuda lawn grass or Bermudagrass) and lack of available fire tinder, in addition to the use of fully operational exhaust deflectors, would minimize the potential for possible grass fires in this area. In addition, Bermudagrass is considered a very hardy grass that is not easily distressed; its rhizomes (rootstalk) allow it to grow back rapidly after disturbance, including potential heat generated under the aircraft as it lands (Fryer 2012). To accommodate harvest rotations and recovery, different landing sites would be used within the 25-acre parcel to minimize disturbance. Gardner Turfgrass would continue to irrigate and maintain the Bermudagrass. If the Proposed Action were implemented there would be negligible fire potential at the proposed HLZ, and therefore, this facet of aircraft safety is not examined further in this EA.

Aircraft Mishaps

Aircraft mishaps are classified as A, B, C, or D (Table 3.4-1). Class A mishaps are the most severe with total property damage of \$2 million or more or a fatality and/or permanent total disability (combat statistics are excluded). Comparison of Class A mishap rates for various aircraft types, as calculated per 100,000 flying hours, provides the basis for evaluating risks among different aircraft and levels of operations.

Table 3.4-1 Aircraft Mishap Classes

Mishap Class	Total Property Damage	Fatality/Injury
A	\$2,000,000 or more damage or total aircraft loss	Fatality and/or permanent total disability
B	\$500,000 to \$2,000,000 damage	Permanent disability or hospitalization for three or more individuals
C	\$50,000 to \$500,000 damage	Loss of worker productivity of one or more days
D	Minor incident not exceeding \$50,000	Minor injury not meeting above criteria

Source: DoD 2011a.

Table 3.4-2 presents the number of mishaps by year, cumulative flight hours of the aircraft since its introduction into the fleet, and mishap rate since 2000. Class A accident (or mishap) rate for the CV-22 is 11.66, for the HH-60 it is 3.73, and for the UH-1 it is 3.15 (Air Force Safety Center [AFSC] 2012). Typically, the longer an aircraft has been in service the lower the mishap rate.

Table 3.4-2 Historic Class A Flight Mishaps for CV-22, HH-60, and UH-1

Year	CV-22			HH-60 (all models)			UH-1 (all models)		
	Class A Mishaps	Cumulative Flight Hours	Mishap Rate	Class A Mishaps	Cumulative Flight Hours	Mishap Rate	Class A Mishaps	Cumulative Flight Hours	Mishap Rate
FY 2000	n/a	n/a	n/a	1	273,846	3.90	1	1,568,833	5.26
FY 2001	n/a	n/a	n/a	0	300,340	0.00	0	1,588,734	0.00
FY 2002	n/a	n/a	n/a	3	325,914	11.73	1	1,607,970	5.20
FY 2003	n/a	n/a	n/a	1	349,703	4.20	0	1,627,274	0.00
FY 2004	n/a	n/a	n/a	0	376,239	0.00	0	1,648,152	0.00
FY 2005	n/a	n/a	n/a	5	403,583	18.29	0	1,674,588	0.00
FY 2006	0	0.4	0.00	0	430,773	0.00	0	1,700,873	0.00
FY 2007	0	2,302.4	0.00	0	456,456	0.00	0	1,727,789	0.00
FY 2008	0	4,222.4	0.00	2	481,868	7.87	0	1,755,137	0.00
FY 2009	1	8,061.4	26.05	1	506,686	4.03	1	1,784,051	3.46
FY 2010	1	11,831.4	26.53	0	536,014	0.00	2	1,812,776	6.96
FY 2011	0	17,154.4	0.00	0	562,682	0.00	1	1,841,487	3.48
Lifetime Total*	2	17,154.4	11.66	21	562,682	3.73	58	1,841,487	3.15

Notes: FY = fiscal year; n/a = aircraft was not operational.

*Since 2006 for CV-22; since 1982 for the HH-60; and since 1959 for the UH-1.

Source: AFSC 2012.

The CV-22 is a relatively new aircraft and historical trends show that mishaps of all types decrease the longer an aircraft is operational as flight crews and maintenance personnel learn more about the aircraft's capabilities and limitations. As the CV-22 becomes more operationally mature, the aircraft mishap rate is expected to become comparable with a similarly sized aircraft with a similar mission. CV-22 improved electronics and maintenance are expected to result in long-term Class A accident rate comparable to that of the USMC MV-22 aircraft and the similarly sized HH-60 helicopter (Table 3.3-2).

The 58 SOW has not experienced a CV-22 or HH-60 Class A mishap since their arrival at the base (about 6 years ago). There was one Class A mishap in FY11 that destroyed a UH-1N helicopter; however, there were no injuries (Kirtland AFB 2011). Detailed mishap response plans and procedures are maintained by

the 58 SOW to respond to a wide range of potential incidents. These plans assign agency responsibilities and prescribe functional activities necessary to react to major mishaps, whether on or off base. Response would normally occur in two phases. The first phase is the initial response that considers such factors as rescue, evacuation, fire suppression, safety, and ensuring security of the area, and other actions immediately necessary to prevent loss of life or further property damage. The initial response element consists of those personnel and agencies primarily responsible for beginning the initial phase. This element includes crash rescue personnel, medical personnel, security police, and crash recovery personnel. The subsequent second phase, the investigative phase, comprises a response team composed of an array of organizations, whose participation is governed by the circumstances associated with the mishap, and actions required to be performed.

If an aircraft accident occurs on non-federal property, regardless of the agency initially responding (for example the local fire department) to the situation, as soon as the situation is stabilized, an investigation area would normally be established around the accident scene. The site would be secured by Air Force personnel and the investigation phase would ensue.

After all required investigations and related actions on the site are complete, the aircraft is removed. The base civil engineer is responsible for site cleanup and either accomplishes this in-house or contracts to an outside entity. Overall, the purpose of response planning is to:

- save lives, property, and material by timely and correct response to mishaps;
- quickly and accurately report mishaps to higher headquarters; and
- investigate the mishap to preclude the reoccurrence of the same or a similar mishap.

In case of emergencies, a civil volunteer fire department, located approximately 2 miles away, would provide initial emergency response in case of an accident at the HLZ; however, there is no current memorandum of understanding in place. If the firehouse is manned and they are able to monitor the same radio frequency as Gardner Turfgrass, the aircrew could attempt a mayday call out prior to impact. After the crash, the crew will get a head count of all crewmembers originally on board to make sure everyone is safely out of the plane. They will then begin making phone calls via cell phone to 911 and also to Kirtland Command Post to advise them of the situation. If cell phones are not available or operable, the crews will use their survival radios. After initial response, the Kirtland Command Post will divert other aircraft flying in the area to assist at the crash site and deploy the 377 Air Base Wing (ABW). The 377 ABW is responsible for fire protection (including crash and rescue) for the base and Albuquerque International Sunport, and would respond to the accident. It is estimated that response time would be 2 hours at a minimum.

Bird/Wildlife Aircraft Strike Hazards

BASH and the dangers it presents form another safety concern for aircraft operations. BASH constitutes a safety concern because of the potential for damage to aircraft or injury to aircrews or local populations if an aircraft crash should occur in a populated area. Aircraft can encounter birds at nearly all altitudes up to 30,000 ft mean sea level (MSL). According to AFSC BASH statistics gathered from FY95 through FY11,

close to 84 percent of bird/wildlife strikes occur below 1,500 ft (AFSC 2012); the altitude at which aircraft would be flying to, from, at, and around the HLZ. However, 71 percent of total BASH incidents occur in the airfield environment and not in transit (AFSC 2012).

The Air Force BASH program was established to minimize the risk for collisions of birds/wildlife and aircraft and the subsequent loss of life and property. In accordance with Air Force Instruction 91-202, *United States Air Force Mishap Prevention Program* (USAF 1998), each flying unit in the Air Force is required to develop a BASH plan to reduce hazardous bird/wildlife activity relative to airport flight operations. The intent of each plan is to reduce BASH issues at airfields by creating an integrated hazard abatement program through awareness, avoidance, monitoring, and actively controlling bird and animal population movements. Some of the procedures outlined in the plan include monitoring the airfield for bird and other wildlife (including deer, coyotes, rabbits, and prairie dogs activity), issuing bird hazard warnings, initiating bird/wildlife avoidance procedures when potentially hazardous bird/wildlife activities are reported, and submitting BASH reports for all incidents.

The *Kirtland AFB BASH Plan* (USAF 2011c) identifies procedures to decrease the potential for bird and wildlife aircraft strike hazards. The 58 SOW Flight Safety Office is responsible for maintaining the BASH Plan and includes addressing training areas that are located near a major migratory flyway along the Rio Grande River. BASH incidences at Kirtland AFB, and in their associated training airspace, are currently low but migratory birds and other wildlife hazards do exist. In FY11, Kirtland AFB recorded 78 minor BASH incidents, with only one resulting in a Class C mishap to an HC-130 aircraft (Kirtland AFB 2011a).

The largest threat to flying units out of Kirtland AFB are migratory and non-migratory birds such as migrating waterfowl (ducks, geese, swans), raptors (hawks, falcons, kites, eagles, vultures), cranes, pigeons and doves, owls, larks, swallows, crows and ravens, blackbirds, grackles, cowbirds and starlings, sparrows, warblers, finches, grosbeaks and buntings. Other wildlife also pose a threat to aircraft practicing landings (USAF 2011c).

3.4.2 Environmental Consequences

Impacts to aircraft and public safety would be considered significant if the ability to provide for safe operation of aircraft is diminished or safety hazards are introduced to risk military personnel, the public, or property.

Proposed Action

The Proposed Action would sublease a site for a low-dust HLZ to be used primarily by the 58 SOW's CV-22 and HH-60/UH-1 aircraft. No increase in the mishap rate is anticipated because operations would remain the same (i.e., the number of flights to and from a low-dust HLZ would remain consistent with existing conditions). Additionally, all safety regulations and procedures currently in force would continue to be applied to minimize risks to aircrews and the general population.

In case of an aircraft accident at the proposed HLZ, there is a local fire department in McIntosh to provide initial response. Secondary crash response is located at Kirtland AFB, and they would access the site using existing roads. Mishap response vehicles would arrive at the HLZ site via the same roads used by trucks that currently load and deliver sod from the Gardner Turfgrass property and would not eclipse the size or frequency of farm equipment or vehicles presently operating at the site. Furthermore, given the rare instance of a potential mishap, incident responders working at the site would have a negligible impact on the ability of Gardner Turfgrass to continue sod production. The remote nature of the site would preclude conflicts with adjacent land owners continuing sod or crop production.

Current BASH procedures would continue to apply to operations going to the proposed HLZ, around the HLZ, and going back to Kirtland AFB. No increases in the number of BASH incidents are anticipated and may decrease with the reduction of distance between the current low-dust HLZ site in southeast Colorado and the new site just east of the base. No unacceptable hazards to military personnel, the public, and property would occur nor would the ability to provide safe operations be hindered.

No-Action Alternative

Under the No-Action Alternative, 58 SOW operations would continue at the low-dust HLZ in southeast Colorado. The potential for aircraft mishaps and BASH incidents would remain unchanged from baseline conditions and as presented under the affected environment.

3.5 LAND MANAGEMENT AND USE

This resource comprises the natural conditions and/or human-modified activities occurring at a particular location. Human-modified land use categories include residential, commercial, industrial, transportation, communications and utilities, agricultural, institutional, recreational, and other developed use areas. Management plans and zoning regulations determine the type and extent of land use allowable in specific areas and are often intended to protect specially designated or environmentally sensitive areas and sensitive noise receptors. The ROI for land use is the 25-acre Gardner Turfgrass sod farm because this is the only area that would be potentially directly affected by the proposed action; it also extends no more than a quarter-mile from the proposed site where noise could affect land management and use.

3.5.1 Affected Environment

The 25-acre site proposed for the low-dust HLZ is located within the City of McIntosh, in Torrance County, New Mexico (refer to Figure 1-1). McIntosh has a population of 1,484 persons (U.S. Census Bureau [USCB] 2010). Nine miles to the north is the City of Moriarty with a population of 1,910, and the City of Estancia, population 1,655, is located 7 miles south of the proposed HLZ (USCB 2010). The 25-acre parcel proposed for subleasing is privately owned but has been leased for more than 20 years by Gardner Turfgrass for sod production. The lot is planted with Bermudagrass and there are no existing structures on the 25-acre parcel.

Torrance County comprises approximately 3,400 square miles with an average population density of approximately five persons per square mile (USCB 2010). Farming and ranching are the predominant

economic activities with the majority of the county's land under agricultural cultivation (Torrance County 2008). The county is zoned for two districts: Agricultural Preservation District and Preplatted Lands District (Torrance County 2009):

Agricultural Preservation District: This zoning district is intended to protect and preserve areas of suitable agricultural soil for agricultural and agriculture-related land uses. The standards prescribed for this district are intended to preserve the open character of the area and thereby to protect the business of agriculture.

Preplatted Land District: This zoning district provides for the appropriate development of preplatted subdivisions which are not considered adequate by current planning or environmental standards. This zoning district is established to encourage and promote private land readjustment.

The 25-acre parcel is located within the Agricultural Preservation District. The adjacent land uses surrounding this parcel are also zoned as Agricultural Preservation District and consist largely of agricultural and/or undeveloped land. Fields to the north and east are planted with sod, land to the west is planted with alfalfa, and to the south is undeveloped vacant land. Refer to Figures 2-1 and 2-2 for aerial photographs of the 25-acre parcel and adjacent lands.

3.5.2 Environmental Consequences

Significance of impacts under this resource is based on the level of land use sensitivity in areas affected by a Proposed Action. In general, impacts would be significant if the action would: 1) be inconsistent or non-compliant with applicable land management plans or policies, 2) preclude the viability of an existing land use activity, 3) preclude continued use or occupation of an area, or 4) be incompatible with adjacent land uses.

Proposed Action

Under the Proposed Action, the Air Force would sublease the 25-acre parcel for the 58 SOW to practice approaches/departures, hovers, rope/hoist maneuvers, and landings in a low-dust environment. In addition, the CV-22, HH-60s, and occasional UH-1 would conduct flight patterns within a 10-mile radius of the new HLZ. Land management and use at the Gardner Turfgrass 25-acre parcel would remain consistent with its current function as a sod farm and would continue to produce sod on prime farm land. The Air Force would sublease the 25 acres from Gardner Turfgrass, who would in turn continue to irrigate and maintain the parcel for Bermudagrass production. To accommodate harvest rotations and crop recovery, different landing sites would be used within the 25-acre parcel to minimize disturbance. Other than subleasing the parcel for the purpose of aircraft training, there would be no other changes to the use of the parcel (no digging, construction, or personnel and cargo deployment) to change its prime farm land status. Potential noise effects are presented in Section 3.6.2.

In terms of adjacent land uses, subleasing the parcel, conducting training at the HLZ, and operating within the adjacent airspace would not be incompatible (again noise compatibility is examined in Section 3.6.2)

with adjacent land management or use. No changes would occur to county zoning districts, management practices, or sod and crop production if the Proposed Action were implemented.

No-Action Alternative

Under the No-Action Alternative, the Air Force would not sublease the 25-acre parcel from Gardner Turfgrass for low-dust HLZ training. Baseline land management and use as described in Section 3.5.1 would remain unchanged.

3.6 NOISE

The main sources of noise within the affected environment consist of vehicles, farming equipment, and the occasional aircraft overflight. The following section discusses the existing noise environment around the HLZ in McIntosh, NM, describes the changes in the noise environment resulting from aircraft training operations, and assesses the potential effects of those changes should the Proposed Action be implemented.

Definition of Resource. Noise is unwanted sound. Sound is all around us; sound becomes noise when it interferes with normal activities, such as sleep or conversation. Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Whether that sound is interpreted as pleasant (e.g., music) or unpleasant (e.g., jackhammers) depends largely on the listener's current activity, past experience, and attitude toward the source of that sound.

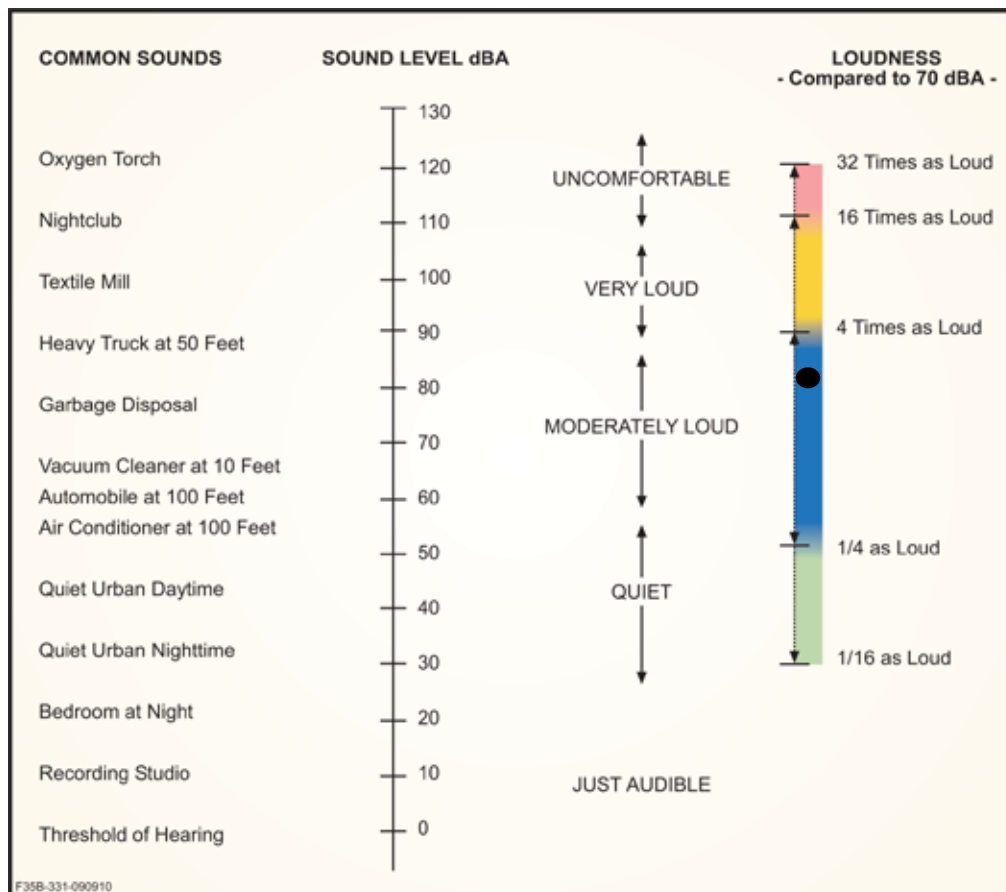
The loudest sounds that can be detected comfortably by the human ear have intensities that are a trillion times higher than those of sounds that can barely be detected. Because of this vast range, using a linear scale to represent the intensity of sound becomes very difficult. As a result, a logarithmic unit known as the decibel (dB) is used to represent the intensity of a sound. Such a representation is called a sound level. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB; sound levels above 120 dB begin to be felt inside the human ear as discomfort. Sound levels between 130 to 140 dB are felt as pain (Berglund and Lindvall 1995).

The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB. On average, a person perceives a change in sound level of about 10 dB as a doubling (or halving) of the sound's loudness, and this relation holds true for loud and quiet sounds. A decrease in sound level of 10 dB actually represents a 90 percent decrease in sound intensity but only a 50 percent decrease in perceived loudness because of the nonlinear response of the human ear (similar to most human senses).

Noise Metrics and Modeling. Sound levels that are measured using A-weighting, called A-weighted sound levels, are often denoted by the unit dBA or dB(A) rather than dB. When the use of A-weighting is understood, the adjective "A-weighted" is often omitted and the measurements are expressed as dB. In this EA (as in most environmental impact analysis documents), dB units refer to A-weighted sound levels.

Noise potentially becomes an issue when its intensity exceeds the ambient or background sound pressures. Ambient background noise in rural neighborhoods (similar to what is found in McIntosh) typically varies from 45 to 50 dB; in metropolitan, urbanized areas like Albuquerque ambient noise levels vary from 60 to 70 dB and can be as high as 80 dB or greater (USEPA 1974).

Figure 3.6-1 presents A-weighted sound levels of typical noise sources. Some sources such as air conditioners and vacuum cleaners are continuous sounds for which levels are constant for a period of time. Some noise sources, like automobiles and trucks, are at their maximum sound level when a vehicle passes by. Some noise levels such as those during the urban daytime or urban nighttime are averages over extended periods. A variety of noise metrics have been developed to describe these differing types of noise sources and how they are measured over time.



Sources: Harris 1979 and FICAN 1997.

Figure 3.6-1 Typical A-Weighted Sound Levels of Common Sounds

Noise Metrics. A noise metric quantifies the noise environment. For this analysis, two families of noise metrics apply—one for single noise events such as an aircraft flying overhead and one for cumulative noise events such as a day’s worth of aircraft activity at and around an HLZ. Within the single event noise family, metrics described below include Sound Exposure Level (SEL) and Maximum Sound Level (L_{max}). Day-Night Average Sound Level (DNL) accounts for cumulative noise events.

Sound Exposure Level (SEL)

This is a composite metric that represents both the intensity of a sound and its duration. Individual time-varying noise events (e.g., aircraft overflights) have two main characteristics: a sound level that changes throughout the event and a period of time during which the event is heard. SEL provides a measure of the net impact of the entire acoustic event, but it does not directly represent the sound level heard at any given time. During an aircraft flyover, SEL would include both the maximum noise level and the lower noise levels produced during onset and recess periods of the overflight.

SEL is a logarithmic measure of the total acoustic energy transmitted to the listener during the event. Mathematically, it represents the sound level of a constant sound that would, in 1 second, generate the same acoustic energy as the actual time-varying noise event. For sound from aircraft overflights, which typically lasts more than 1 second, the SEL is usually greater than the L_{\max} because an individual overflight takes seconds and the maximum sound level (L_{\max}) occurs instantaneously. SEL represents the best metric to compare noise levels from overflights.

Maximum Sound Level (L_{\max})

The highest A-weighted integrated sound level measured during a single event in which the sound level changes value with time (e.g., an aircraft overflight) is called the maximum A-weighted sound level or maximum sound level.

During an aircraft overflight, the noise level starts at the ambient or background noise level, rises to the maximum level as the aircraft flies closest to the observer, and returns to the background level as the aircraft recedes into the distance. The measurement indicates the maximum sound level occurring for a fraction of a second. For aircraft noise, the “fraction of a second” over which the maximum level is defined is generally 1/8 second, and is denoted as “fast” response (American National Standards Institute 1988). Slowly varying or steady sounds are generally measured over a period of 1 second, denoted “slow” response. The maximum sound level is important in judging the interference caused by a noise event with conversation, television or radio listening, sleep, or other common activities. Although it provides some measure of the intrusiveness of the event, it does not completely describe the total event, because it does not include the period of time that the sound is heard.

Day-Night Average Sound Level (DNL)

Day-Night Average Sound Level (or DNL) is a composite metric that accounts for the SEL of all noise events in a 24-hour period. In order to account for increased human sensitivity to noise at night, a 10-dB penalty is applied to nighttime events between 10:00 p.m. to 7:00 a.m. (termed environmental night). It accounts for the added intrusiveness of sounds that occur during normal sleeping hours, both because of the increased sensitivity to noise during those hours and because ambient sound levels during nighttime are typically about 10-dB lower than during daytime hours.

The inclusion of daytime and nighttime periods in the computation of DNL reflects its basic 24-hour definition. It can, however, be applied over periods of multiple days. For military operations at the HLZ, where operations are not necessarily consistent from day to day, a common practice is to compute a 24-hour DNL based on an average busy day, so that the calculated noise is not diluted by periods of low activity.

The above-described metrics are average quantities, mathematically representing the continuous A-weighted sound level that would be present if all of the variations in sound, which occurs over a 24-hour period, were smoothed out so as to contain the same total sound energy. These composite metrics account for the maximum noise levels, the duration of the events (sorties or operations), and the number of events that occur over a 24-hour period.

NOISEMAP is used to generate noise level contour bands in A-weighted DNL around an airfield (or in this case the proposed HLZ). The model uses the aircraft type and number; the takeoffs, landings, touch and goes, as well as closed patterns; and time of operation to depict long-term fixed-wing and rotary-wing noise levels.

Most people are exposed to sound levels of 50 to 55 dB DNL or greater on a daily basis. Studies specifically conducted to determine noise impacts on various human activities show that about 90 percent of the population is not significantly bothered by outdoor sound levels below 65 dB DNL (Schultz 1978, Finegold *et al.* 1994). Studies of community annoyance in response to numerous types of environmental noise show that DNL correlates well with impact assessments and that there is a consistent relationship between DNL and the level of annoyance. When hearing noise, the following variables can affect a person's reaction:

- Intensity,
- Duration,
- Repetition,
- Abruptness of the onset or stoppage of the noise,
- Background noise levels,
- Interference with activities,
- Previous community experience with the noise,
- Time of day exposure occurs,
- Fear of personal danger from the noise sources, and
- Extent that people believe the noise can be controlled (USACHPPM 2006).

All of these factors play into how annoyed the community may feel at any one time when noise is generated at the HLZ. To assist the community in land-use planning and zoning, the Air Force undertakes the Air Installation Compatible Use Zone (AICUZ) Program. This Program was established in the early 1970s by the DoD to balance the need for aircraft operations with community concern over aircraft noise and accident potential. The goals of the AICUZ Program are to protect the health, safety, and welfare of those living and working near military airfields and to preserve the military flying mission. The AICUZ

study analyzes aircraft noise, accident potential, land use compatibility, and operational procedures, and it provides recommendations for compatible development near air installations. The purpose of the AICUZ Program is to promote compatible land development in areas subject to aircraft noise and accident potential due to aircraft operations. For purposes of this EA, aircraft noise and accident potential guidelines are used to determine the potential for impacts.

3.6.1 Affected Environment

The affected environment includes those areas affected by aircraft conducting operations at and around the proposed HLZ (measured in DNL) as well as the noise levels individuals could be exposed to from aircraft overflights (as measured in SEL and L_{max}). Under existing conditions, the noise environment at and around the 25-acre parcel would be described as rural in nature, experiencing intermittent noise sources from farming equipment, trucks, and the occasional aircraft overflight (airspace over the parcel currently supports MTRs that military aircraft currently use but typically at levels above 1,000 ft [refer to Figure 2-3]). As was mentioned above, noise levels in this rural environment would range from 45 to 50 dB, but could increase to 80 dB under windy conditions.

3.6.2 Environmental Consequences

Within this noise section, noise levels generated going to and from the HLZ as well as around the HLZ are presented and impacts evaluated. When traversing to and from the base, aircraft would fly VFR and would not take a specific flight path; rather the flights would be intermittent and would not consistently fly over the same location every time. The noise metrics used to estimate impacts from these types of operations are SEL and L_{max} . Cumulative noise levels that would be generated at and around the HLZ are analyzed in terms of DNL. Impacts would be considered significant if noise levels would increase to such an extent that they could adversely impact the human and/or natural environment or be incompatible with adjacent land uses.

Proposed Action

Under the Proposed Action CV-22s, HH-60s, and UH-1s would annually conduct up to 184 sorties to and from the HLZ. While this averages about 4 sorties per week, some weeks there could be more sorties, and other weeks fewer. Table 3.6-1 presents noise levels at various altitudes for the three aircraft and represents the maximum noise level, L_{max} , during an aircraft flyover or hover as well as the SEL, which characterizes the total sound energy of the flyover event. The CV-22 operates in two flight regimes; airplane- and helicopter-mode with rotors tilted forward and upward, respectively.

Table 3.6-1 Comparison of SEL and L_{max} among CV-22, HH-60, and UH-1

Altitude (feet AGL)	SEL (dBA)				L _{max} (dBA)			
	CV-22 Airplane	CV-22 Helo	HH-60	UH-1	CV-22 Airplane	CV-22 Helo	HH-60	UH-1
Cruise^{1, 2, 3}								
200	88.2	98.9	92.2	100.3	83.6	95.7	86.6	93.4
500	85.0	92.5	89.4	95.7	79.1	85.7	82.9	85.4
1,000	81.1	88.8	85.7	92.1	72.3	80.2	76.7	79.2
2,000	76.9	84.6	81.5	88.2	65.4	73.2	69.8	72.7
Hovering^{3, 4}								
50	N/A	113.0	105.6	107.7	N/A	105.8	97.0	100.0
100	N/A	107.1	112.7	118.2	N/A	99.0	90.9	97.1
200	N/A	101.1	93.9	95.4	N/A	92.4	84.7	86.5
500	N/A	92.8	85.8	87.2	N/A	83.7	76.4	78.0
1,000	N/A	86.3	79.3	80.7	N/A	77.0	69.9	71.4
2,000	N/A	79.3	72.4	73.8	N/A	70.0	63.0	64.4

Notes: CV-22 Airplane means aircraft in airplane mode; CV-22 Helo means aircraft in helicopter mode.

¹Estimates CV-22 from Rotorcraft Noise Map (RNM) data using surrogates: HH-60 (SH-60B) and UH-1 (AH-1W).

²Cruise estimates CV-22 at 170 knots indicated airspeed, level flight; HH-60 at 100 knots, and UH-1 at 80 knots.

³Standard atmospheric (70 degrees Fahrenheit; 59 percent relative humidity).

⁴Hovering values from RNM, airspeed at 5 knots.

While transiting to and from the HLZ, maximum noise levels would range between 65.5 and 93.5 dBA directly under the flight path for the various aircraft, rounded to the nearest 0.5 decibel. The maximum noise level would only be experienced briefly at the closest point of approach with noise level rising and falling as the aircraft flew over. For comparison, an automobile and textile mill, both at 100 ft, are approximately 65 and 100 dB, respectively (refer to Figure 3.6-1). In terms of the startle effect, these rotor-wing aircraft fly at speeds that make their presence audible from a distance and receptors would be aware of their approach and experience little startle effect; unlike fast-moving fighter aircraft where receptors are often not aware of the aircraft until it is over them. In summary, noise impacts due to aircraft overflights going to and from Kirtland AFB would not be significant.

Noise levels are higher and occur for longer duration when aircraft are conducting hovering maneuvers at the HLZ. When aircraft hover between 50 to 100 ft AGL maximum noise levels, directly beneath the aircraft, range between 63 and 106 dBA for the various aircraft, rounded to the nearest 0.5 decibel. At a slant range of 2,000 ft, which corresponds to distance slightly less than a quarter mile from the hover location on the ground, the maximum noise levels would range between 63 and 70 dBA for the various aircraft. At this distance, noise levels would be comparable to a vacuum cleaner at 10 ft (around 70 dB (refer to Figure 3.6-1). If the Proposed Action were implemented, noise generated by hovering operations would not cause significant effects to the human or natural environment.

While the HLZ is not an airfield, it is similar to an airfield in that there will be landings and takeoffs and the Air Force, for purposes of this analysis, adopted the AICUZ approach to identify cumulative (i.e., DNL) noise impacts at and around the proposed HLZ. The AICUZ Program identifies land use compatibilities using averaged sound levels that occur during the day and night and then categorizes the noise levels into three zones: Noise Zone I includes areas exposed to noise levels 65 dB DNL or less;

Noise Zone II includes areas exposed to 65 to 75 dB DNL, and Noise Zone III includes areas exposed to noise levels 75 dB DNL and greater. To evaluate potential cumulative noise impacts, land uses adjacent to and around the HLZ were identified and evaluated as to whether they are compatible with the resultant noise levels.

Land uses that are most sensitive to noise typically include residential and commercial areas, public services (e.g., schools and hospitals), and areas associated with cultural and recreational activities. Noise Zone I is generally considered compatible with all types of land uses such as residences, schools, hospitals, parks, and churches. Exposure to noise levels in Zone II is normally compatible with industrial, manufacturing, transportation, and resource production (e.g., industrial parks, factories, and highways) activities. All land uses exposed to Noise Zone III are generally considered incompatible with the exception of industrial and manufacturing activities and agricultural production where there are no residences (DoD 2011b).

This EA used Rotorcraft Noise Model (RNM) for modeling projected average noise levels at and around the HLZ. As indicated in Chapter 2, each sortie to and from the HLZ would average about 90 minutes; this includes 15 minutes flying to the HLZ, conducting about 60 minutes of training at and around the HLZ (including about 10 landings per sortie), and 15 minutes returning to the base. On an annual basis, 80 percent of HLZ operations (77 CV-22 and 70 HH-60/UH-1 operations) would occur during the “environmental day” hours between 7:00 a.m. and 10:00 p.m. and 20 percent (19 CV-22 and 18 HH-60/UH-1) during environmental night (10:00 p.m. to 7:00 a.m.). These hours are broken into environmental day and night for noise modeling purposes due to the 10-dB penalty applied to operations during environmental night. In addition, it was assumed that aircraft will operate 240 days a year, accounting for weekends and holidays when the aircraft do not typically operate.

While training tempo would vary from month to month, an average busy month for the CV-22 would involve approximately eight sorties (or 0.4 sorties per day over 240 days per year). No more than four sorties would occur over a 24-hour period and about 48 of the CV-22 sorties would involve a two-ship formation. For the HH-60/UH-1, there would be no more than seven sorties per month (or 0.36 sorties per day over 240 days a year), with no more than two sorties occurring over a 24-hour period.

All HLZ activity was modeled as an idealized, worst-case (i.e., most conservative) scenario such that approaches were from the same direction and pattern- and hover-work overlapped. This scenario is unrealistic because aircraft can approach the HLZ from any direction depending on wind direction. Additionally, hover-work would be laterally dispersed around the 25-acre site. Therefore, estimated DNL noise levels presented here are extremely conservative and actual noise exposure would be less. Table 3.6-2 shows the noise levels, for: 1) average operations over the year (annual average) and 2) operations in the busiest month. Given these conservative estimates, on an average busy day, contours of 75 dB DNL and greater would remain within the 25-acre site. The 70 dB DNL contour would extend 500 ft, approximately to the edge of the site, and the 65 dB DNL contour would extend another 1,000 ft beyond the edge of the site.

Table 3.6-2 Day-Night Average Sound Levels at HLZ

Noise Level (dB DNL)	Measured in Feet from Center Point	
	<i>Annual Average</i>	<i>Busy Month</i>
65	1,000	1,500
70	450	500
75	300	300
80	200	200

For the average busy day under the worst-case scenario, the 65 dB DNL contour would extend less than 1,000 ft beyond the edge of the site. Neither residences nor sensitive noise receptors would be adversely or significantly affected. This conclusion is justified because these noise level estimates were based on very conservative estimates and would not occur under normal operating circumstances. In fact, there would be an average of less than 1 operation per day, by all aircraft, given the total number of operations anticipated under this proposal.

3.7 BIOLOGICAL RESOURCES

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Plant associations are generally referred to as *vegetation* and animal species are referred to as *wildlife*. Habitat can be defined as the resources and conditions present in an area that produces occupancy of a plant or animal (Hall *et al.* 1997). Although the existence and preservation of biological resources are intrinsically valuable, these resources also provide aesthetic, recreational, and socioeconomic values to society. This analysis focuses on species that are important to the function of the ecosystem, of special societal importance, or are protected under federal or state law or statute. For purposes of this EA, these resources are divided into three major categories: vegetation, wildlife, and special status species.

Vegetation types include all existing terrestrial plant communities as well as their individual component species. As no construction or other ground-disturbing activities are proposed, the amount of disturbance to vegetation would be negligible. Therefore, vegetation will not be carried forward as a resource category for further analysis.

Wildlife generally includes all fish, amphibian, reptile, bird, and mammal species (and for purposes of this analysis both wild and domesticated animals) with the exception of those identified as special status species, which are treated separately. Wildlife also includes those bird species protected under the federal Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, and other species-specific conservation legal authorities. Assessment of a project's effect on migratory birds places an emphasis on "species of concern" as defined by EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*. Additional assessment of potential impacts on migratory birds that are regionally rare occurs under the special status species category.

Special status species are defined as those taxa listed as endangered, threatened, and species proposed for listing by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA) or the New Mexico Department of Game and Fish (NMDGF). The federal ESA protects federally listed

endangered and threatened plant and animal species. Federally identified candidate species (species proposed for listing) are not protected under law; however, these species could become federally listed over the near term, and therefore are considered to avoid future conflicts if they were to be listed during the preparation of this EA. Additionally, the NMDGF protects state-listed plant and animal species through state environmental conservation administrative codes.

3.7.1 Affected Environment

The ROI includes biological resources on lands in the vicinity of the proposed HLZ that could be potentially impacted by the proposal to sublease and conduct operations at the site. It is not anticipated that subleasing the site would impact biological resources; therefore, this facet of the Proposed Action is not evaluated further. In addition, vegetation is not discussed or analyzed further because: 1) the entirety of the site is cultivated for Bermudagrass (an introduced plant species) that would have little potential to be harmed by operations at the site, and 2) flight operations to and from the base to the HLZ would have no impacts to vegetation.

Wildlife

The proposed HLZ is located within the Western Great Plains Shortgrass Prairie consisting of flat to rolling uplands that are primarily characterized by blue grama (*Bouteloua gracilis*). However, the majority of the landscape adjacent to the proposed HLZ is under sod production or growing crops, although these cultivated lands are known to support populations of migratory birds. Common bird species that are found in this region include the golden eagle (*Aquila chrysaetos*), scaled quail (*Callipepla squamata*), long-billed curlew (*Numenius americanus*), ferruginous hawk (*Buteo regalis*), mourning dove (*Zenaida macroura*), and loggerhead shrike (*Lanius ludovicianus*) (NMDGF 2006). Sandhill cranes (*Grus canadensis*) can be found during winter migration and can congregate in high densities, feeding on a variety of agricultural crops including alfalfa. Because they can do a great bit of damage to crops, the NMDGF permits sandhill crane hunting (NMDGF 2012a). Common mammals include the least shrew (*Cryptotis parva*), Arizona myotis bat (*Myotis lucifugus*), mule deer (*Odocoileus hemionus*), and prairie vole (*Microtus ochrogaster*). Common reptiles and amphibians include the western chorus frog (*Pseudacris triseriata*) and the western diamondback rattlesnake (*Crotalus atrox*) (NMDGF 2006). In terms of domesticated animals, there are cows, horses, dogs, and other animals found in the ROI but not at the proposed HLZ site.

At the request of NMDGF, a field check was undertaken to determine whether there was any evidence of raptor nesting activity within a half-mile radius of the proposed HLZ site. On July 9, 2012, a wildlife ecologist conducted the field check and no evidence of nesting was observed within the half-mile radius, though raptors were observed in the area (Swainson's hawks were seen flying and perching, and a Great-Horned owl pair was observed on an adjacent landowner's farm). Swainson's hawk nesting activity was observed outside the half-mile radius, and the neighboring landowner indicated that owls have nested on his property (in his barn or on a windmill tower/platform in his yard) for many years. Though his farmyard is within the half-mile radius identified for the field check, under the Proposed Action

habitations and vertical features such as windmills will be avoided during HLZ operations; therefore, disruption of the owl's nesting activity is not anticipated.

Special Status Species

Two federally listed and five state listed species are known to occur in Torrance County. Because of the lack of habitat, four of these species (Arctic peregrine, bald eagle, Mexican spotted owl, and black-footed ferret) are not found within the affected environment (Table 3.7-1). The whooping crane (*Grus americana*), American peregrine falcon (*Falco peregrinus anatum*), and the Baird's sparrow (*Ammodramus bairdii*) are the only federal or state listed species potentially occurring as seasonal migrants at or in the vicinity of the proposed HLZ.

Table 3.7-1 Threatened and Endangered and Special Status Species Occurring in Torrance County, New Mexico

Species	Status	Key Habitat Elements	Status Within Project Area
Birds			
American peregrine falcon <i>Falco peregrinus anatum</i>	ST	Found in mountain and river canyons and rarely in lowlands during winter.	Low potential to occur as seasonal migrant within vicinity of project area.
Arctic peregrine falcon <i>Falco peregrinus tundrius</i>	ST	Nests found on tall cliffs in mountain and canyon habitats in remote areas with minimal human disturbance.	No potential to occur within the vicinity of the project area due to lack of habitat.
Baird's sparrow <i>Ammodramus bairdii</i>	ST	Prefers dense grassland with a minor shrub component.	Low potential to occur as seasonal migrant within vicinity of project area.
Bald Eagle <i>Haliaeetus leucocephalus alaskanus</i>	ST	Found near rivers and lakes, where occasional tall trees provide lookout perches and night roosts.	No potential to occur within the vicinity of the project area due to lack of habitat.
Mexican spotted owl <i>Strix occidentalis lucida</i>	FT	Generally residents of old-growth or mature forest.	No potential to occur within the vicinity of the project area due to lack of habitat.
Whooping Crane <i>Grus americana</i>	ENP, SE	Primarily found in productive wetland ecosystems.	Low potential to occur as seasonal migrant within vicinity of project area.
Mammals			
Black-footed ferret <i>Mustela nigripes</i>	FE	Habitat typically coincides with prairie dog habitats.	No potential to occur within the vicinity of the project area due to lack of habitat.

Notes: FE = Federally Endangered; FT = Federally Threatened; ENP = Experimental, Non-essential Population; SE = State Endangered; ST = State Threatened.

Source: NMDGF 2012b, USFWS 2012.

3.7.2 Environmental Consequences

Determining significant impacts to biological resources is based on: 1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, 2) the proportion of the resource that would be affected relative to its occurrence in the region, 3) the sensitivity of the resource to proposed activities, and 4) the duration of ecological ramifications. Impacts to biological resources would be considered significant if: species or habitats of concern were affected over relatively large areas,

disturbances resulted in reductions in the population size or distribution of a special status species, or if laws, codes, or ordinances protecting special status species were violated.

During informal consultation neither the U.S. Fish and Wildlife Service nor the U.S. Forest Service noted any issues. The NMDGF recommended that before operations began that raptor surveys be conducted within a half mile of the HLZ during the breeding season between May and August.

Proposed Action

Wildlife. Aircraft operations near undeveloped or rural areas have the potential to add noise (see Section 3.2 for noise-specific discussion) and visual stressors to the natural environment and cause a response by wildlife (including domesticated animals). Impacts to wildlife due to aircraft audio and visual stressors include: “startle reflex” induced running or flight, increased expenditure of energy during critical periods, decreased time and energy spent on life functions such as seeking food or mates, increased susceptibility to predation, and interruption of breeding or nursing (Efroymson *et al.* 2000, Larkin 1996).

The type of noise that can stimulate the startle reflex tends to vary among animal species. Studies have indicated that sudden, loud noises associated with visual stimuli produce the most intense reactions (Efroymson *et al.* 2000). Rotary-wing aircraft such as helicopters are believed to generally induce the startle reflex more frequently than fixed-wing aircraft. In the case of the CV-22, the aircraft would function more like a fixed-wing aircraft while in transit, with onset of sound building up relatively gradually and the rotating blades forming a blur rather than being seen as rotating parts, reducing the potential for a startle effect. Effects related to downdraft and noise from the aircraft would diminish with distance from it. Exposure to elevated noise levels would generally be localized around the actual site where landings, take-offs, and low-level hovering would occur but diminish the further away from the site.

While there could be potential noise effects, impacts are unlikely to be significant. Currently, the proposed HLZ is part of a sod production operation where farm and irrigation equipment, as well as vehicles, are common occurrences. No species, domesticated animals, or habitats of concern would be disturbed to result in reductions in the population size or distribution of wildlife.

Wildlife (such as deer, birds, and livestock) may be startled but are mobile and move if disturbed. There are many areas to relocate to in the vicinity of the proposed HLZ (refer to Figure 2-1). Existing BASH procedures would be undertaken to ensure that encounters with birds (including hawks and owls) are avoided both at the site and in flight. Areas most likely to support breeding (e.g., cliffs, washes, or other areas of mature trees, dense vegetation, or wetlands) do not occur within a half-mile of the proposed HLZ.

Another factor evaluated is the potential surface disturbance by air currents (or rotorwash) emanating from the rotors. It is not expected to significantly affect habitat conditions for wildlife since the HLZ is located on a non-native Bermudagrass sod field and rotorwash is not expected to expand outside the 25-acre sod area. In addition, Bermudagrass is considered a very hardy rhizomatous grass that is not easily distressed. Its rhizomes (rootstalk) allow it to grow back rapidly after disturbance, including potential heat

generated under the aircraft as it lands (Fryer 2012). Therefore, rotorwash or any ground disturbance from landing the aircraft would be unlikely to affect the abundance or distribution of wildlife populations.

Special Status Species. The whooping crane, American peregrine falcon, and the Baird's sparrow have potential to occur as seasonal migrants in the vicinity of the proposed HLZ. There is no habitat to support nesting or breeding at or in the vicinity of the HLZ. Under the Proposed Action, impacts to special status species would be the same as those described for wildlife above. Noise would occur as a result of aircraft operations but these sensitive species are mobile and move if disturbed. Adherence to existing BASH procedures would minimize the risk of bird-aircraft strike.

No-Action Alternative

Under the No-Action Alternative, the new low-dust HLZ would not be subleased at Gardner Turfgrass; training would continue in southeast Colorado. Biological resources, as described in Section 3.6.1, would remain the same as found under baseline conditions.

4.0 CUMULATIVE EFFECTS

CHAPTER 4 CUMULATIVE EFFECTS

This section provides: 1) a definition of cumulative effects, 2) a description of past, present, and reasonably foreseeable actions relevant to cumulative effects, 3) an analysis of the incremental interaction the proposed action may have with other actions, and 4) an evaluation of cumulative effects potentially resulting from these interactions.

4.1 DEFINITION OF CUMULATIVE EFFECTS

CEQ regulations stipulate that the cumulative effects analysis within an EA should consider the potential environmental impacts resulting from “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR § 1508.7). CEQ guidance in *Considering Cumulative Effects* affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with the proposed action. The scope must consider geographic and temporal overlaps among the proposed action and other actions. It must also evaluate the nature of interactions among these actions.

Cumulative effects are most likely to arise when a relationship or synergism exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in close proximity to the proposed action would be expected to have more potential for a relationship than those more geographically separated. Similarly, actions that coincide, even partially, in time would tend to offer a higher potential for cumulative effects.

To identify cumulative effects the analysis needs to address three fundamental questions:

1. Does a relationship exist such that affected resource areas of the proposed action might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
2. If one or more of the affected resource areas of the proposed action and another action could be expected to interact, would the proposed action affect or be affected by impacts of the other action?
3. If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the proposed action is considered alone?

4.2 SCOPE OF CUMULATIVE EFFECTS ANALYSIS

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this EA the geographic extent, or ROI, is the 25 acres proposed for subleasing and any areas adjacent to the site affected by operations with noise levels at or greater than 65 dB DNL. The time frame for cumulative effects begins with initiation of the sublease and extends 5 years into the future. This 5-year time frame is chosen since actions can be identified within the “reasonably foreseeable” future.

4.3 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS

A thorough search for relevant related actions within the ROI was performed to identify past, present, and reasonable foreseeable actions that could cumulatively interact with the Proposed Action. Documents prepared by federal, state, and local government agencies formed the primary sources of information and included:

- Comprehensive Land Use Plan for Torrance County, NM, adopted by the County Commission in July 2003, revised in 2008 (Torrance County 2008).
- Preserving the Enchantment, A Plan for New Mexico, 2007-2011. New Mexico Historic Preservation Division (New Mexico 2007).
- Torrance County Zoning Ordinance as Adopted in 1990 and revised in 2008 (Torrance County 2008).
- New Mexico Statewide Comprehensive Outdoor Recreation Plan, Update. July 2009 (New Mexico 2009).
- New Mexico Tourism Department Strategic Plan, 2011/2012 Action Items (New Mexico 2011).
- New Mexico Department of Transportation, Statewide Transportation Improvement Plan, Fiscal Years 2012-2015, Amendment 1, January 2012 (New Mexico 2012).
- Air Force NEPA documents (USAF 2011d, 2012).

Examination of state and local planning documents did not identify any actions that would cumulatively interact with the low-dust HLZ proposal. Other documents such as state and federal wildlife management plans, development plans, and related studies were assessed. None of these documents or future plans by Gardner Turfgrass indicated any past, present, or reasonable foreseeable actions that could interact with the Proposed Action either geographically or temporally.

Kirtland AFB is proposing new C-130 aerial drop zones (USAF 2011d) and a landing zone (USAF 2012) for the C-130s; however, both actions would occur to the west of Albuquerque and would not, therefore, have the potential to introduce cumulative impacts when considered with the HLZ proposal.

4.4 CUMULATIVE EFFECTS SUMMARY

In terms of cumulative effects, no significant impacts are anticipated because: 1) no past, present, or reasonably foreseeable actions would interact with the Proposed Action to cause any significant impacts; 2) noise levels at or above 65 dB DNL would not occur or be of sufficient magnitude to affect adjacent population or sensitive species; and 3) the temporary and intermittent rotary-wing aircraft operations would not conflict with continued agricultural activities.

5.0 OTHER NEPA CONSIDERATIONS

CHAPTER 5 OTHER NEPA CONSIDERATIONS

5.1 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

Implementation of the Proposed Action would not result in the unavoidable loss of any resources.

5.2 RELATIONSHIP BETWEEN SHORT-TERM USE OF THE HUMAN ENVIRONMENT, AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

NEPA requires analysis of the relationship between a project's short-term impacts on the environment and the effects those impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. This means that choosing one option may reduce future flexibility in pursuing other options, or that committing a resource to a certain use may eliminate the possibility for other uses of that resource.

Implementation of the Proposed Action would not result in impacts that would reduce environmental productivity, permanently narrow the range of beneficial uses of the environment, or pose long-term risks to health, safety, or the general welfare of the public.

5.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Primary irreversible effects result from permanent use of a nonrenewable resource. Irretrievable resource commitments involve the loss in value of an affected nonrenewable resource that cannot be restored or consumption of renewable resources that are not permanently lost. Secondary impacts could result from environmental accidents. Nonrenewable resources are those resources that cannot be replenished by natural means, including oil, natural gas, and iron ore. Renewable natural resources are those resources that can be replenished by natural means, including water, lumber, and soil.

The Proposed Action would not impose irreversible or irretrievable impacts to renewable or nonrenewable resources. Renewable resources would not be affected because there would be no increases or decreases in water use, there is no timber found at the proposed HLZ and thus not consumed, and no land disturbance would occur to affect soils. In terms of nonrenewable resources, implementation of the Proposed Action would actually result in a *decrease* in these irretrievable resources. This would occur because transit to and from the proposed HLZ would decrease the amount of fuel consumed by both aircraft and maintenance crews. The proposed HLZ is about twice as close (65 miles) than the current low-dust HLZ (130 miles). Therefore, no irretrievable or irreversible impacts are associated with implementing the Proposed Action.

Under the No-Action Alternative, fossil fuels would continue to be consumed at the current rate and no reductions in nonrenewable resources would occur. Though not significant, impacts would continue to nonrenewable resources should the No-Action Alternative be chosen for implementation.

5.4 OTHER CONSIDERATIONS

Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, set goals for federal agencies in areas such as energy efficiency, renewable energy, toxic chemical reduction, recycling, sustainable buildings, electronics stewardship, and water conservation. EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, expands on the requirements set forth in EO 13423 and requires that all new construction comply with the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings*. This includes employing design and construction strategies that increase energy efficiency, eliminate solid waste, and reduce stormwater runoff. EO 13423 sets as a goal for all federal agencies the improvement of energy efficiency and the "reduction of greenhouse gas emissions of the agency, through reduction of energy intensity by (i) 3 percent annually through the end of fiscal year 2015, or (ii) 30 percent by the end of fiscal year 2015, relative to the baseline to the agency's energy use in fiscal year 2003."

The Air Force has developed an energy plan to reduce energy demand, increase energy supply, and create a culture change where energy is a consideration in all actions (USAF 2008b, 2010). Implementation of this vision has resulted in a decrease in facility energy intensity by nearly 18 percent since 2003; reducing ground vehicle fleet fossil fuel consumption by 15 percent since 1999; purchasing over 190,000 Energy Star®-compliant computers since July 2007; and implementing cost efficiencies, such as reducing aircraft weight and optimizing flight routes, where mission appropriate. In addition, by 2016, the Air Force plans to cost-effectively acquire 50 percent of contiguous U.S. aviation fuel via a synthetic fuel blend, utilizing domestic feedstocks and produced in the U.S., with the intent requirements that the synthetic fuel purchases be sourced from suppliers with manufacturing facilities that engage in carbon dioxide capture and effective reuse (USAF 2008b).

While the Proposed Action may contribute to the consumption of nonrenewable resources, it is anticipated that consumption would slightly decrease and not have an adverse impact on continued availability, and the energy resource commitment would not increase in terms of region-wide usage. Furthermore, the Air Force's on-going efforts to comply with the requirements set forth in EO 13423 would assist in minimizing any further irreversible or irretrievable effects to multiple non-renewable and renewable resources.

6.0 REFERENCES CITED

CHAPTER 6 REFERENCES CITED

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7.0 LIST OF PREPARERS

CHAPTER 7 LIST OF PREPARERS

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B.A., State University of New York at Binghamton, 2000

M.A., Anthropology, University of Arizona, 2007

Years of Experience: 6

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M.S., Fire Ecology, Colorado State University, 2002

Years of Experience: 9

Vanessa Williford, *Land Management and Use*

B.S., Resource and Environmental Studies, Texas State University, 2002

Years of Experience: 8

APPENDIX A

COORDINATION AND CONSULTATION CORRESPONDENCE

Elected Officials

Salutation	First Name	Last Name	Title	Agency/Organization	Address 1	City	State	Zip Code
The Honorable	Jeff	Bingaman		United States Senate	625 Silver Avenue SW, Suite 130	Albuquerque	NM	87102
The Honorable	Tom	Udall		United States Senate	219 Central Avenue NW, Suite 120	Albuquerque	NM	87102
The Honorable	Martin	Heinrich		United States House of Representatives	505 Marquette NW, Ste 1605	Albuquerque	NM	87102
Mr.	Richard	Vigil		State Representative, District 70	418 Raynolds Avenue	Las Vegas	NM	87701
Ms.	Rhonda S.	King		State Representative, District 50	P.O. Box 6	Stanley	NM	87056
Mr.	Pete	Campos		New Mexico State Senate	500 Raynolds Avenue	Las Vegas	NM	87701
Ms.	Sue Wilson	Beffort		New Mexico State Senate	67 Raindance Rd.	Sandia Park	NM	87047
		Board of Directors		Mid-Region Council of Governments	809 Copper Avenue NW	Albuquerque	NM	87102
Mr.	Ted	Hart	Mayor	City of Moriarty	P.O. Box 130	Moriarty	NM	87035
Ms.	Cassandra	Garcia	Planning and Zoning Officer	Town of Estancia	1000 Highland Street	Estancia	NM	87016
Mr.	Ted	Barela	Mayor	Town of Estancia	513 Willisams	Estancia	NM	87016
Ms.	Susan	Gauna	Chair	Planning and Zoning Commission, Town of Estancia	P.O. Box 130	Moriarty	NM	87035
Ms.	Joy	Ansley	County Manager	Torrance County	P.O. Box 48	Estancia	NM	87016
Mr.	Steven	Guetschow	Planning and Zoning Coordinator	Torrance County	P.O. Box 48	Estancia	NM	87016

Federal & State Agencies

Salutation	First Name	Last Name	Title	Agency/Organization	Address 1	Address 2	Address 3	City	State	Zip Code
Dr.	Benjamin	Tuggle	Southwest Regional Director	U.S. Fish and Wildlife Service	New Mexico Ecologicfal Services Field Office	2105 Osuna Road NE		Albuquerque	NM	87113
Ms.	Jackie	Andrew		U.S. Forest Service	Southwestern Region NEPA Coordinator	333 Broadway Boulevard SE		Albuquerque	NM	87102
Mr.	Al	Armendariz	Regional Administrator	U.S. Environmental Protection Agency, Region 6	Fountain Place 12 Floor, Suite 1200	1445 Ross Avenue		Dallas	TX	75202-2733
Mr.	John	Jones	District Conservationist	Natural Resources Conservation Service	P.O. Box 58			Estancia	NM	87016
Mr.	Tim	Tandy		Federal Aviation Administration	ASW-640	260 Meachum Blvd.		Fort Worth	TX	76137-4298
Ms.	Jan	Biella	Acting, State Historic Preservation Officer	Department of Cultural Affairs	Historic Preservation Division	Bataan Memorial Building	407 Galisteo Street, Suite 236	Santa Fe	NM	87501
Mr.	Ed	Singleton	District Manager	Bureau of Land Management	Albuquerque District Office	435 Montano Road NE		Albuquerque	NM	87107-4935
Ms.	Georgia	Cleverly		New Mexico Environment Department	Office of Planning and Performance	P.O. Box 5469		Santa Fe	NM	87502-5469
Ms.	Terra	Monasco		New Mexico Game and Fish	Assitant Chief of Conservation Services Division	P.O. Box 25112		Santa Fe	NM	87504
Mr.	Tom	Bagwell	Interim Director/Secretary	New Mexico Department of Agriculture	MSC 3189, Box 30005			Las Cruces	NM	88003-8005
Mr.	Jim	Noel	Cabinet Secretary	New Mexico Energy, Minerals and Natural Resources Department	1220 South St. Francis Drive			Santa Fe	NM	87505
Mr.	Ray	Powell	Commissioner	New Mexico State Land Office	P.O. Box 1148			Santa Fe	NM	87504-1148
Ms.	Sue	Hansen	Project Manager	Ciudad Soil and Water Conservation District	6200 Jefferson NE, Room 125			Albuquerque	NM	87109
Mr.	Bob	Hudson	Airport Manager	Moriarty Municipal Airport	P.O. Box 130			Moriarty	NM	87035
Ms.	Julie	Alcon	Chief, Environmental Resources Section	U.S. Army Corps of Engineers	4101 Jefferson Plaza NE			Albuquerque	NM	87109

Indian Tribes

Salutation	First Name	Last Name	Agency/Organization	Address 1	City	State	Zip Code
President	Mark	Chino	Mescalero Apache Tribe	P.O. Box 227	Mescalero	NM	88340
Governor	Walter	Dasheno	Pueblo of Santa Clara	P.O. Box 580	Espanola	NM	87532
Governor	Ron	Lovato	Ohkay Owingeh	P.O. Box 1099	San Juan Pueblo	NM	87566
Governor	Richard	Luarkie	Pueblo of Laguna	P.O. Box 194	Laguna Pueblo	NM	87026
Governor	Frank	Lujan	Pueblo of Isleta	P.O. Box 1270	Isleta Pueblo	NM	87022
Governor	Ernest J.	Lujan	Pueblo of Santa Ana	2 Dove Road	Santa Ana Pueblo	NM	87004
Director	James Roger	Madalena	Five Sandoval Indian Pueblos	1043 Highway 313	Bernalillo	NM	87004
Governor	Joshua	Madelena	Pueblo of Jemez	P.O. Box 100	Jemez Pueblo	NM	87024
Governor	Perry	Martinez	Pueblo of San Ildefonso	Route 5, Box 315-A	Santa Fe	NM	87506
Director	Michael	Miller	Eight Northern Indian Pueblos Council	P.O. Box 969	San Juan Pueblo	NM	87566
Governor	Malcom	Montoya	Pueblo of Sandia	481 Sandia Loop	Bernalillo	NM	87004
Governor	Gerald	Nailor	Pueblo of Picuris	P.O. Box 1270	Penasco	NM	87553
Speaker	Johnny	Naize	Navajo Nation Council, Office of the Speaker	P.O. Box 3390	Window Rock	AZ	86515
Governor	Anthony	Ortiz	Pueblo of San Felipe	P.O. Box 4339	San Felipe Pueblo	NM	87001
Governor	Phillip A.	Perez	Pueblo of Nambe	Route 1, Box 117-BB	Santa Fe	NM	87506
President	Levi	Pesata	Jicarilla Apache Nation	P.O. Box 507	Dulce	NM	87528
Governor	Arlen P.	Quetawki, Sr	Pueblo of Zuni	P.O. Box 339	Zuni	NM	87327
Governor	Phillip	Quintana	Pueblo of Cochiti	P.O. Box 70	Cochiti Pueblo	NM	87072
Governor	Sisto	Quintana	Kewa Pueblo	P.O. Box 99	Santo Domingo Pueblo	NM	87052
Governor	George	Rivera	Pueblo of Pojoaque	78 Cities of Gold Road	Santa Fe	NM	87506
Governor	Ramos	Romero	Pueblo of Tesuque	Route 42, Box 360-T	Santa Fe	NM	87506
Governor	Laureano B.	Romero	Pueblo of Taos	P.O. Box 1846	Taos	NM	87571
Chairman	Chandler	Sanchez	All Indian Pueblo Council	2401 12th Street, NW	Albuquerque	NM	87103
President	Ben	Shelly	Navajo Nation	P.O. Box 7440	Window Rock	AZ	86515
Governor	Wilfred	Shue	Pueblo of Zia	135 Capitol Square Dr.	Zia Pueblo	NM	87053-6013
Governor	Randall	Vicente	Pueblo of Acoma	P.O. Box 309	Acoma	NM	87034

Repositories

Agency/Organization	Address 1	City	State	Zip Code
Estancia Public Library	600 S Tenth Street	Estancia	NM	87016
Moriarty Community Library	202 South Broadway	Moriarty	NM	87035
Mountainair Public Library	109 N. Roosevelt	Mountainair	NM	87036
East Mountain Public Library	1 Old Tijeras Rd.	Tijeras	NM	87059
Ernie Pyle Library	900 Girard SE	Albuquerque	NM	87106
Albuquerque Main Library	501 Copper NW	Albuquerque	NM	87102
San Pedro Library	5600 Trumbull SE	Albuquerque	NM	87108
Lomas Tramway Library	908 Eastridge NE	Albuquerque	NM	87123

**SAMPLE HCEP, INFORMAL CONSULTATION, AND
GOVERNMENT-TO-GOVERNMENT
CORRESPONDENCE**



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 377TH AIR BASE WING (AFMC)

Colonel John C. Kubinec
377ABW/CC
2000 Wyoming Blvd SE Suite E-3
Kirtland AFB NM 87117-5000

APR 25 2012

Dr. Benjamin Tuggle
Southwest Regional Director
U.S. Fish and Wildlife Service
500 Gold Avenue SW
Albuquerque NM 87102

Dear Dr. Tuggle

The United States Air Force's 58th Special Operations Wing (SOW) is preparing an Environmental Assessment (EA) addressing the proposed subleasing of a new low-dust Helicopter Landing Zone (HLZ) in McIntosh, New Mexico (NM). The new low-dust HLZ would be subleased for use by the 58 SOW, a unit of the Air Education and Training Command (AETC) at Kirtland Air Force Base (KAFB). This low-dust HLZ would be primarily used by CV-22 tilt-rotor and HH-60 rotary aircraft operating from Kirtland AFB in Albuquerque, NM. Occasional use would also be undertaken by the UH-1 rotary aircraft, also based at KAFB. No other aircraft from the Air Force or Department of Defense agencies would use the proposed HLZ.

The area proposed for subleasing is located about 65 miles east of KAFB (see attached figure) and is approximately 25 acres in size. The property has previously, and is currently, used commercially to grow Bermudagrass. The land is privately owned and has been leased, managed, and maintained by Gardner Turfgrass for over 20 years for sod production. The Air Force is proposing to sublease 25 acres from Gardner Turfgrass for use as a low-dust HLZ with Gardner Turfgrass continuing as primary lessee where they shall continue to irrigate and maintain the Bermudagrass at the proposed location and the rest of their leasehold.

Military operations at KAFB and Albuquerque International Sunport (ABQ) runways and landing areas would not change from current conditions and the total number of sorties leaving and arriving at KAFB would also not change. However, current low-dust HLZ training operations flown by CV-22, HH-60, UH-1 aircraft to and from Piñon Canyon in southeastern Colorado would no longer occur with these training operations being redirected to the proposed HLZ in McIntosh, NM.

The Environmental Assessment (EA) for this proposal is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508, National Historic Preservation Act (NHPA) and regulations at 36 CFR Part 800, and Air Force NEPA regulation 32 CFR 989). This EA will evaluate potential impacts on humans and the natural environment associated with the Proposed Action and No-Action Alternatives.

Pursuant to Section 106 of the NHPA, the Air Force identified and evaluated the Area of Potential Effect (APE), and determined there are no National Register Historic Properties listed or any eligible sites located within the APE. Additionally, no ground-disturbing activities, other than a continuance of the existing sod farm operations in support of landings/takeoffs at the site, are proposed.

The likelihood that previously unknown/undocumented sites will be encountered if either the proposed action or the no action alternative is implemented is very low. Therefore, the Air Force has concluded that the proposed subleasing of the Gardner Turfgrass parcel for use as a low-dust HLZ, and the consequent operations, will not affect historic properties. We respectfully request that you indicate in writing that you concur with our determination of "No Historic Properties Affected."

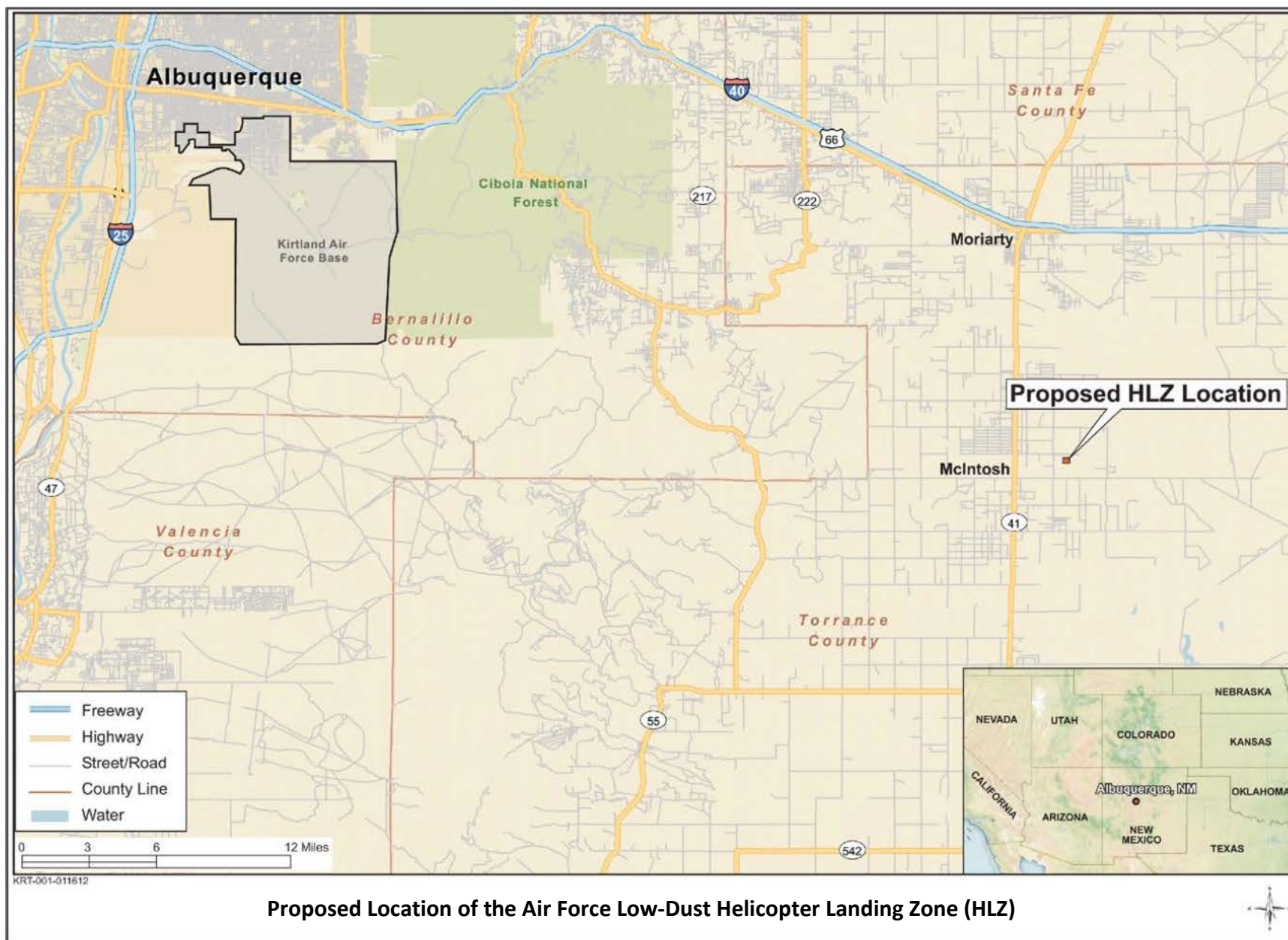
If your agency has additional information of which we are unaware regarding the presence of, or impacts to, historic properties or other environmental aspects, we would appreciate receiving such information for inclusion and consideration during the NEPA processes. We look forward to, and welcome, your participation in this NEPA action. Please respond within 30 days of receipt of this letter to ensure your concerns are adequately addressed in the proposed EA.

Please send your written responses to the NEPA Program Manager, 377 MSG/CEANQ, 2050 Wyoming Boulevard SE, Suite 125, Kirtland AFB NM 87117, or via email to nepa@kirtland.af.mil.

Sincerely


JOHN C. KUBINEC, Colonel, USAF
Commander

Attachment: Project Location Figure





DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 377TH AIR BASE WING (AFCV)

Colonel John C. Kubinec
377 ABW/CC
2000 Wyoming Blvd SE Suite E-3
Kirtland AFB NM 87117-5000

APR 25 2012

The Honorable Jeff Bingaman
United States Senate
625 Silver Avenue SW Suite 130
Albuquerque NM 87102

Dear Senator Bingaman

The United States Air Force's 58th Special Operations Wing (SOW) is preparing an Environmental Assessment (EA) addressing the proposed subleasing of a new low-dust Helicopter Landing Zone (HLZ) in McIntosh, New Mexico (NM). The new low-dust HLZ would be subleased for use by the 58 SOW, a unit of the Air Education and Training Command (AETC) at Kirtland Air Force Base (KAFB). This low-dust HLZ would be primarily used by CV-22 tilt-rotor and HH-60 rotary aircraft operating from Kirtland AFB in Albuquerque, NM. Occasional use would also be undertaken by the UH-1 rotary aircraft, also based at KAFB. No other aircraft from the Air Force or Department of Defense agencies would use the proposed HLZ.

The area proposed for subleasing is located about 65 miles east of KAFB (see attached figure) and is approximately 25 acres in size. The property has previously, and is currently, used commercially to grow Bermudagrass. The land is privately owned and has been leased, managed, and maintained by Gardner Turfgrass for over 20 years for sod production. The Air Force is proposing to sublease 25 acres from Gardner Turfgrass for use as a low-dust HLZ with Gardner Turfgrass continuing as primary lessee where they shall continue to irrigate and maintain the Bermudagrass at the proposed location and the rest of their leasehold.

Military operations at KAFB and Albuquerque International Sunport (ABQ) runways and landing areas would not change from current conditions and the total number of sorties leaving and arriving at KAFB would also not change. However, current low-dust HLZ training operations flown by CV-22, HH-60, UH-1 aircraft to and from Piñon Canyon in southeastern Colorado would no longer occur with these training operations being redirected to the proposed HLZ in McIntosh, NM.

The Environmental Assessment (EA) for this proposal is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508, National Historic Preservation Act (NHPA) and regulations at 36 CFR Part 800, and Air

Force NEPA regulation 32 CFR 989). This EA will evaluate potential impacts on humans and the natural environment associated with the Proposed Action and No-Action Alternatives.

If your agency has additional information of which we are unaware regarding the presence of, or impacts to, historic properties or other environmental aspects, we would appreciate receiving such information for inclusion and consideration during the NEPA processes. We look forward to, and welcome, your participation in this NEPA action. Please respond within 30 days of receipt of this letter to ensure your concerns are adequately addressed in the proposed EA.

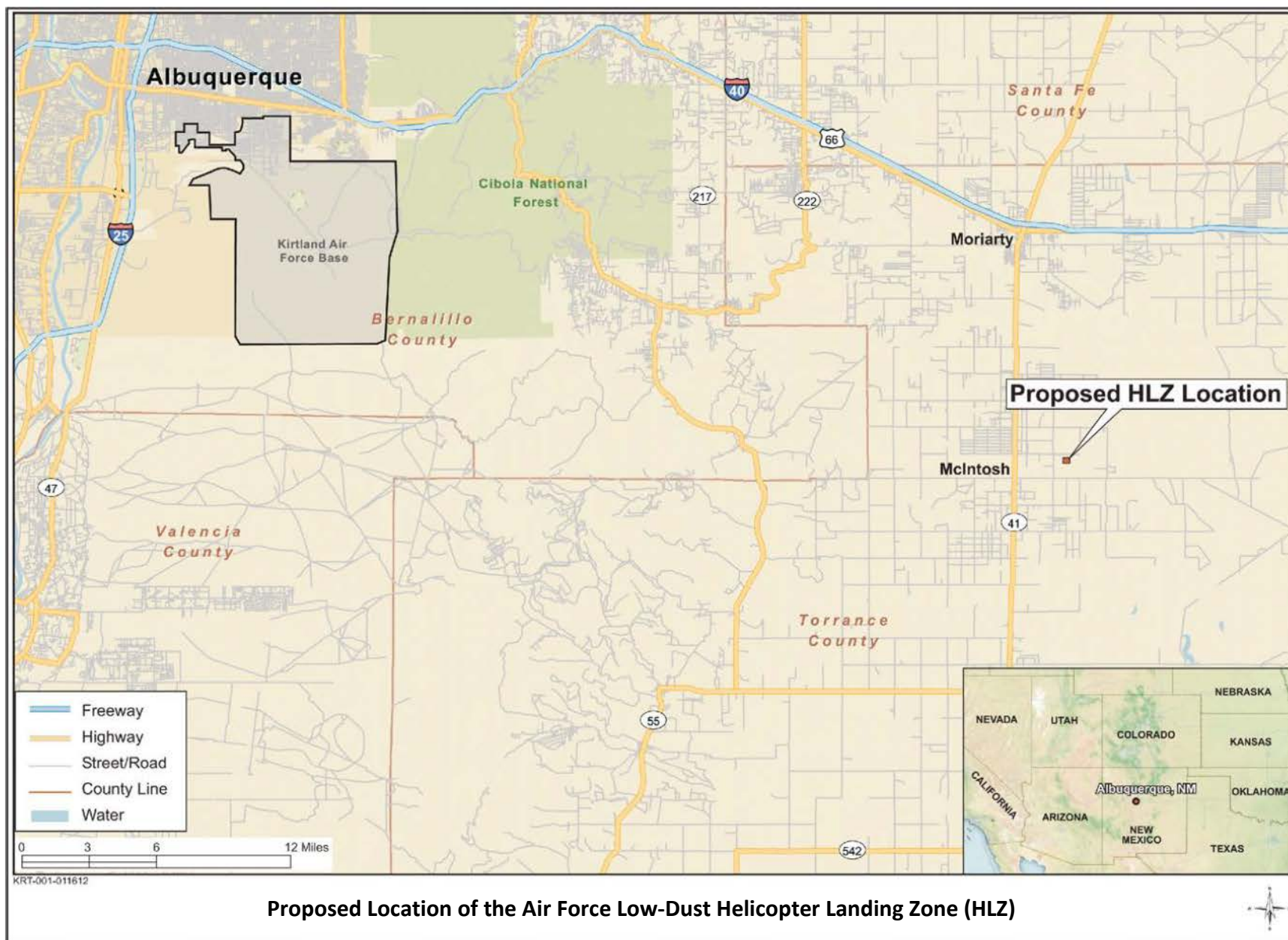
Please send your written responses to the NEPA Program Manager, 377 MSG/CEANQ, 2050 Wyoming Boulevard SE, Suite 125, Kirtland AFB NM 87117, or via email to nepa@kirtland.af.mil.

Sincerely

V12


JOHN C. KUBINEC, Colonel, USAF
Commander

Attachment: Project Location Figure





DEPARTMENT OF THE AIR FORCE
OFFICE OF THE ASSISTANT SECRETARY FOR
OPERATIONS AND SUPPORT

Colonel John C. Kubinec
377 ABW/CC
2000 Wyoming Blvd SE Suite E-3
Kirtland AFB NM 87117-5000

APR 25 2012

Ms. Jan Biella
Acting State Historic Preservation Officer
Department of Cultural Affairs
Historic Preservation Division
Bataan Memorial Building
407 Galisteo Street Suite 236
Santa Fe New Mexico 87501

Dear Ms. Biella

The United States Air Force's 58th Special Operations Wing (SOW) is preparing an Environmental Assessment (EA) addressing the proposed subleasing of a new low-dust Helicopter Landing Zone (HLZ) in McIntosh, New Mexico (NM). The new low-dust HLZ would be subleased for use by the 58 SOW, a unit of the Air Education and Training Command (AETC) at Kirtland Air Force Base (KAFB). This low-dust HLZ would be primarily used by CV-22 tilt-rotor and HH-60 rotary aircraft operating from Kirtland AFB in Albuquerque, NM. Occasional use would also be undertaken by the UH-1 rotary aircraft, also based at KAFB. No other aircraft from the Air Force or Department of Defense agencies would use the proposed HLZ.

The area proposed for subleasing is located about 65 miles east of KAFB (see attached figure) and is approximately 25 acres in size. The property has previously, and is currently, used commercially to grow Bermudagrass. The land is privately owned and has been leased, managed, and maintained by Gardner Turfgrass for over 20 years for sod production. The Air Force is proposing to sublease 25 acres from Gardner Turfgrass for use as a low-dust HLZ with Gardner Turfgrass continuing as primary lessee where they shall continue to irrigate and maintain the Bermudagrass at the proposed location and the rest of their leasehold.

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Pursuant to Section 106 of the NHPA, the Air Force identified and evaluated the Area of Potential Effect (APE), and determined there are no National Register Historic Properties listed or any eligible sites located within the APE. Additionally, no ground-disturbing activities, other than a continuance of the existing sod farm operations in support of landings/takeoffs at the site, are proposed.

The likelihood that previously unknown/undocumented sites will be encountered if either the proposed action or the no action alternative is implemented is very low. Therefore, the Air Force has concluded that the proposed subleasing of the Gardner Turfgrass parcel for use as a low-dust HLZ, and the consequent operations, will not affect historic properties. We respectfully request that you indicate in writing that you concur with our determination of "No Historic Properties Affected."

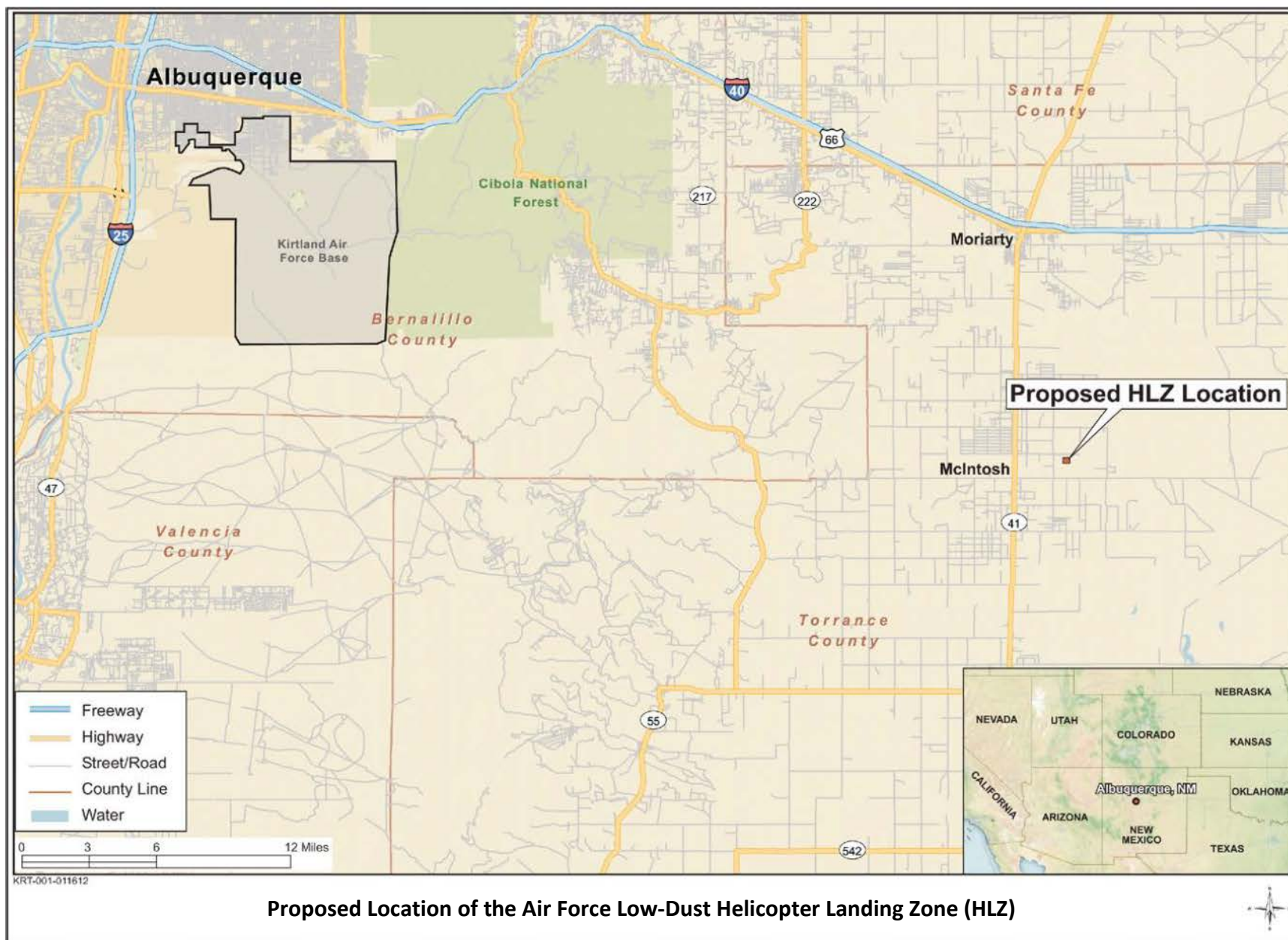
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Sincerely

JOHN C. KUBINEC, Colonel, USAF
Commander

Attachment: Project Location Figure





DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 377TH AIR BASE WING (AFMC)

Colonel John C. Kubinec
377ABW/CC
2000 Wyoming Blvd SE Suite E-3
Kirtland AFB NM 87117-5000

1 APR 25 2012

Chairman Chandler Sanchez
All Indian Pueblo Council
2401 12th Street NW
Albuquerque NM 87103

Dear Chairman Sanchez

The United States Air Force's 58th Special Operations Wing (SOW) is preparing an Environmental Assessment (EA) addressing the proposed subleasing of a new low-dust Helicopter Landing Zone (HLZ) in McIntosh, New Mexico (NM). The new low-dust HLZ would be subleased for use by the 58 SOW, a unit of the Air Education and Training Command (AETC) at Kirtland Air Force Base (KAFB). This low-dust HLZ would be primarily used by CV-22 tilt-rotor and HH-60 rotary aircraft operating from Kirtland AFB in Albuquerque, NM. Occasional use would also be undertaken by the UH-1 rotary aircraft, also based at KAFB. No other aircraft from the Air Force or Department of Defense agencies would use the proposed HLZ.

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2

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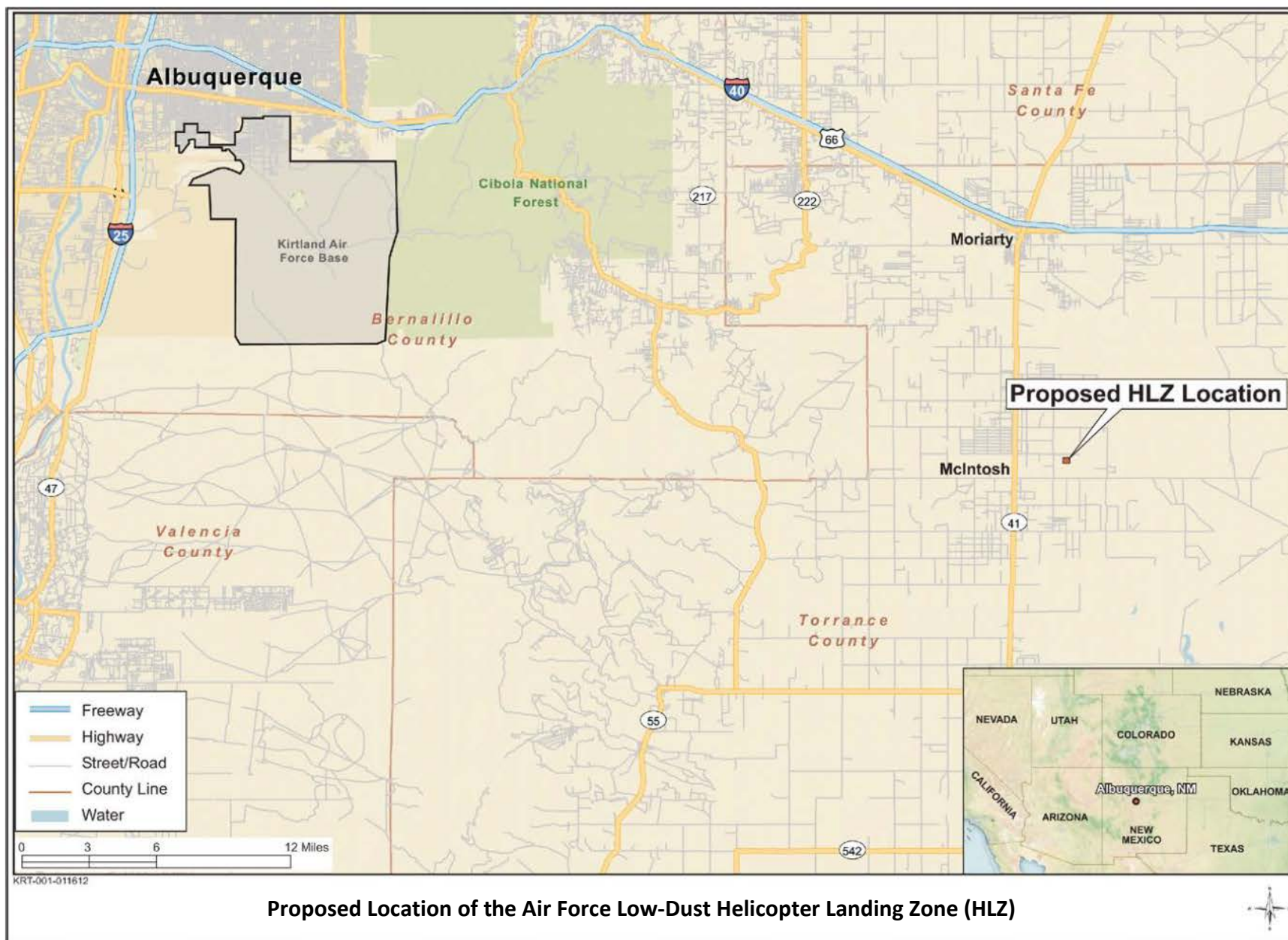
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Please send your written responses to the NEPA Program Manager, 377 MSG/CEANQ, 2050 Wyoming Boulevard SE, Suite 125, Kirtland AFB NM 87117, or via email to nepa@kirtland.af.mil.

Sincerely


JOHN C. KUBINEC, Colonel, USAF
Commander

Attachment: Project Location Figure



RESPONSES



Natural Resources Conservation Service
6200 Jefferson NE, Room 305
Albuquerque, NM 87109
Phone: (505) 761-4400 Fax: (505) 761-4462
Website: www.nm.nrcs.usda.gov

May 11, 2012

John C. Kubinec, Colonel, USAF
NEPA Program Manager
377 MSG/CEANQ
2050 Wyoming Boulevard SE, Suite 125
Kirkland AFB, New Mexico 87117

Dear Colonel Kubinec:

Thank you for providing the Natural Resources Conservation Service (NRCS) the opportunity to review the low-dust Helicopter Landing Zone project in Torrance County, New Mexico.

The Farmland Protection Policy Act (FPPA) authorizes the NRCS to provide review of proposed projects that have the potential to irreversibly convert farmlands to non-farmland uses as the result of programs funded by the federal government. In review of the information provided on the project, it is determined that the proposed project would not convert farmlands to non-farmlands. The FPPA rules define farmland conversion to be "to the extent that it irreversibly converts farmland to other purposes"; this project is not expected to have that effect. With this acknowledged, the proposed project will not cause Prime or Unique Farmlands to be converted to nonagricultural uses, and is not subject to the Act. The Impact Conversion Rating Form (AD-1006) is not needed for this project.

If you have any questions concerning soils information, please contact Clarence Chavez, Soil Data Quality Specialist, at (505) 761-4435 or email at clarence.chavez@nm.usda.gov.

Sincerely,



J. XAVIER MONTOYA
State Conservationist

Enclosures

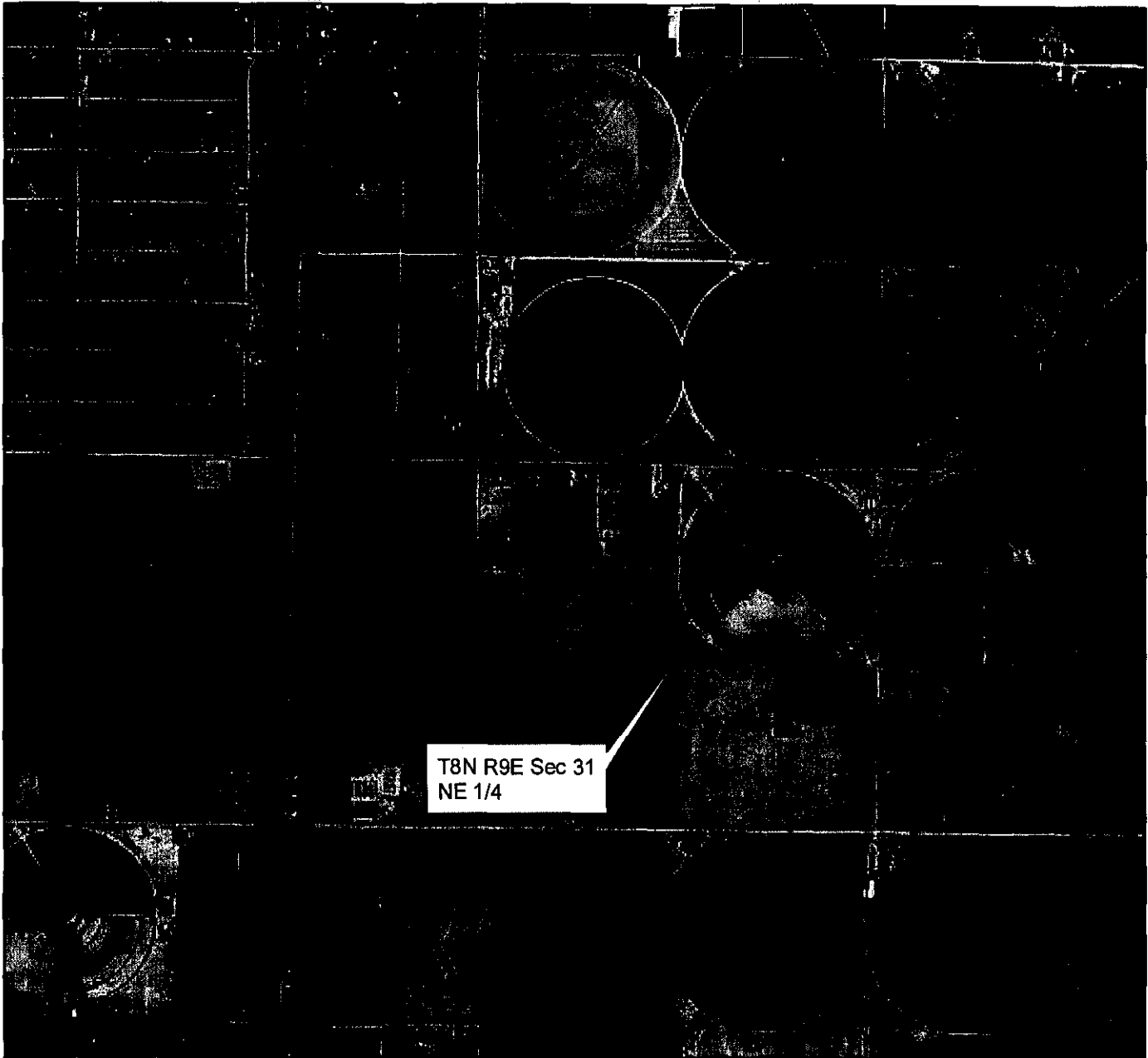
cc: (w/o enclosures)
Clarence Chavez, Soil Data Quality Scientist, NRCS, Albuquerque, NM

Proposed Low-Dust HLZ

Date: 5/9/2012

Field Office: ESTANCIA SERVICE CENTER
Agency: USDA-NRCS
Assisted By: Michael Jones

District: EAST TORRANCE SOIL & WATER CONSERVATION DISTRICT

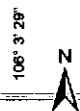
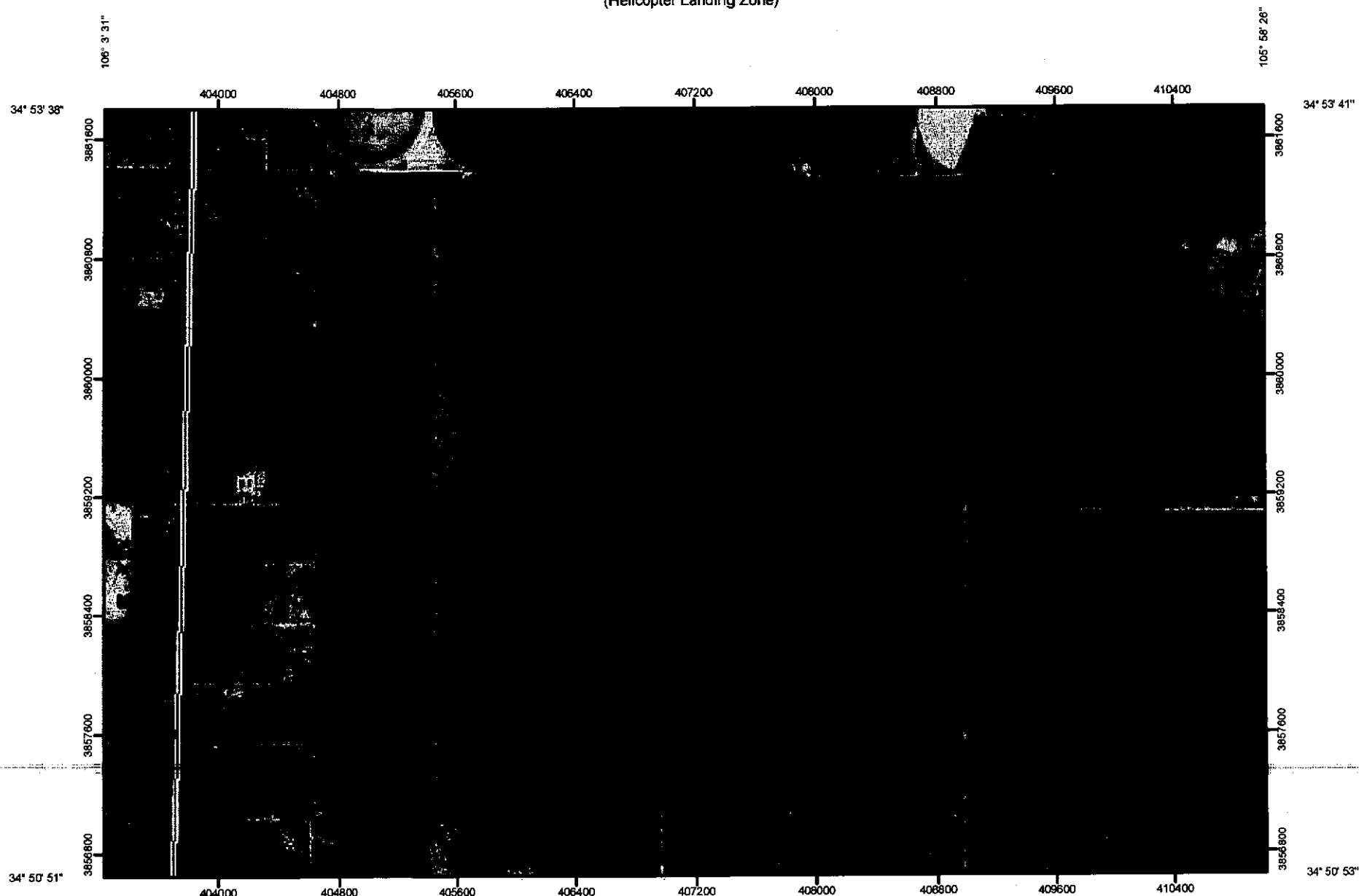


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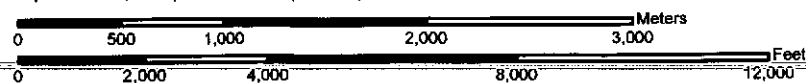
1,000 0 1,000 2,000 3,000 4,000 Feet



Farmland Classification—Torrance Area, New Mexico
(Helicopter Landing Zone)



Map Scale: 1:36,900 if printed on A size (8.5" x 11") sheet.



Farmland Classification

Farmland Classification— Summary by Map Unit — Torrance Area, New Mexico (NM674)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ma	Manzano loam, 0 to 1 percent slopes	All areas are prime farmland	69.1	1.3%
Mc	Manzano loam, saline substratum, 0 to 1 percent slopes	All areas are prime farmland	815.9	15.8%
Pd	Pedrick loamy fine sand	Farmland of statewide importance	169.1	3.3%
Wh	Willard fine sandy loam	All areas are prime farmland	405.3	7.8%
Wk	Willard loam	Farmland of statewide importance	3,410.8	66.0%
Wl	Willard loam, eroded	Farmland of statewide importance	172.2	3.3%
Wt	Witt-Harvey-Pinon loams, 1 to 9 percent slopes	Not prime farmland	127.4	2.5%
Totals for Area of Interest			5,169.8	100.0%

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

From: [377 MSG/CEAN NEPA Environmental Assessment](#)
To: [Rose, Kathy L](#); [STOUGH, MARK K GS-13 USAF DoD AFCEE/TDX](#)
Subject: FW: proposed McIntosh NM HLZ
Date: Wednesday, May 30, 2012 10:31:59 AM

FYI, please see below.

Thank you,
Joshua Adkins
NEPA Program Manager
505-846-7084
DSN 246-7084

-----Original Message-----

From: Steven Guetschow [<mailto:SGuetschow@torrancecountynm.org>]
Sent: Wednesday, May 30, 2012 8:10 AM
To: 377 MSG/CEAN NEPA Environmental Assessment
Subject: RE: proposed McIntosh NM HLZ

There are no significant archeological sites on the subject property.
There are some residential tracts within 1/2 mile of the subject property.

Steven Guetschow
Torrance County
P&Z Coordinator
(505) 246-4761

-----Original Message-----

From: 377 MSG/CEAN NEPA Environmental Assessment
[<mailto:NEPA@kirtland.af.mil>]
Sent: Tuesday, May 29, 2012 11:50 AM
To: Steven Guetschow
Subject: RE: proposed McIntosh NM HLZ

Sir,

The information requested below is: North Half of the Northwest Quarter (N1/2 NW1/4) and the Southeast Quarter of the Northwest Quarter (SE1/4 NW1/4) of Section 32, Township 8N, Range 9E. Please let me know if you have any questions or comments.

Thank you,
The KAFB NEPA Program Manager

-----Original Message-----

From: Steven Guetschow [<mailto:SGuetschow@torrancecountynm.org>]
Sent: Monday, May 21, 2012 12:39 PM
To: 377 MSG/CEAN NEPA Environmental Assessment
Subject: proposed McIntosh NM HLZ

To whom it may concern,

The map sent with your letter of intent is unclear to the exact location of the property to be subleased. Please provide a legal description

including the section, township, and range of the proposed HLZ so we can give you an accurate determination on your request.

Steven Guetschow

Torrance County

P&Z Coordinator

(505) 246-4761

GOVERNOR
Susana Martinez



DIRECTOR AND SECRETARY
TO THE COMMISSION
James S. Lane, Jr.

Daniel E. Brooks, Deputy Director

STATE OF NEW MEXICO DEPARTMENT OF GAME & FISH

One Wildlife Way
Santa Fe, NM 87507
Post Office Box 25112
Santa Fe, NM 87504
Phone: (505) 476-8008
Fax: (505) 476-8124

Visit our website at www.wildlife.state.nm.us
For information call: (888) 248-6866
To order free publications call: (800) 862-9310

STATE GAME COMMISSION

JIM McCLINTIC
Chairman
Albuquerque, NM

THOMAS "DICK" SALOPEK
Vice-Chairman
Las Cruces, NM

DR. TOM ARVAS
Albuquerque, NM

SCOTT BIDEgain
Tucumcari, NM

ROBERT ESPINOZA, SR.
Farmington, NM

PAUL M. KIENZLE III
Albuquerque, NM

BILL MONTOYA
Alto, NM

May 25, 2012

NEPA Program Manager
377 MSG/CEANQ
2050 Wyoming Blvd. NE, Suite 125
Kirtland AFB NM 87117

Re: McIntosh NM Helicopter Landing Zone Environmental Assessment
NMDGF Doc. No. 15076

Dear Sirs:

The Department of Game and Fish has reviewed your 25 April scoping letter regarding the above-referenced project. The letter requests concurrence from us regarding Kirtland Air Force Base determination of "No Historic Properties Affected". We assume that this letter was intended for the New Mexico State Historic Preservation Office, which can provide concurrence for your determination.

Regarding wildlife and important wildlife habitats potentially affected by this proposed project, the Department recommends that before operations begin, breeding season (May-August) raptor surveys be conducted within 0.5 miles of the proposed helicopter landing zone. If nesting raptors are located, the U.S. Fish and Wildlife Service's Migratory Bird Permit office should be contacted at (505) 248-7882, or permitsR1MB@fws.gov to determine mitigation options.

We appreciate the opportunity to comment on this project. Should you have any questions regarding our comments, please contact Mark Watson, Habitat Specialist, of my staff at (505) 476-8115, or mark.watson@state.nm.us.

Sincerely,

Matt Wunder, Ph.D.
Chief, Conservation Services Division

Rose, Kathy L

From: Sorensen, Peg -FS <psorensen@fs.fed.us>
Sent: Friday, May 25, 2012 4:16 PM
To: 377 MSG/CEAN NEPA Environmental Assessment
Subject: New Low-Dust HLZ

Greetings,

Thank you for the opportunity to provide information and comments on your proposal to sublease and develop a new low-dust HLZ near McIntosh, New Mexico. The Southwest Region of the U.S. Forest Service does not have any information or concerns related to the development of your environmental analysis for this proposal. We would encourage you to consider including the Regional Office (Region 2) and Forests near the Piñon Canyon site in southeastern Colorado.

Peg Sorensen, Regional Environmental Coordinator (NEPA)
Southwestern Region, USDA Forest Service
333 Broadway Blvd. SE
Albuquerque, NM 87102 505-842-3256

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FINDINGS OF SECTION 106 REVIEW

**PUEBLO OF SANTA ANA
TRIBAL HISTORIC PRESERVATION OFFICE
02 DOVE ROAD
SANTA ANA PUEBLO, NEW MEXICO 87004**

TO: 377 MSG/CEANQ
2050 WYOMING BLVD SE, SUITE 125
KIRTLAND AIR FORCE BASE, NEW MEXICO 87117

FOR ATTENTION OF: NEPA Program Manager

UNDERTAKING: Low-dust HLZ

FINDINGS: **No Historic Properties Affected**

NMCRIS SITES OR TCPs: None

UNDERTAKING:	PROCEED WITH THE CURRENT UNDERTAKING. These findings do not apply to any future undertakings.
---------------------	--

LOCATION

PROPERTY OWNER : Gardner Turfgrass
SERIAL NO.: --
PARCEL : --
US SURVEY: --
LOT(s) : --
ACREAGE : 25

LOCALE : McIntosh, NM
USGS QUAD : --
TOWNSHIP : --
RANGE : --
SECTION(s) : --
MERIDIAN : --

INVESTIGATIVE PHASE: Identification

INVENTORY BY: USAF

INVENTORY DATE: Not available

REPORT BY: Not available

AREA OF POTENTIAL EFFECTS (APE): The APE of the undertaking is 25 acres of privately owned property near McIntosh, N.M. subleased by USAF.

MANAGEMENT RECOMMENDATIONS: With respect to your obligations under Section 106 (16 USC 470f) of the National Historic Preservation Act and recognition of the Pueblo of Santa Ana as a consulting party per 36 CFR §800.2(c)(2)(A), the Santa Ana Tribal Historic Preservation Office



Concurs



Does not concur

with your finding of No Historic Properties Affected. No cultural resources or TCPs were identified within the APE of the subject property that are opposed to the Tribes' interest, or that meet the criteria of eligibility for inclusion in the National Register of Historic Places (36 CFR §60.4). The section 106 review is on file. If the current transaction does not occur, a Section 106 Review may be required for any future undertakings for the protection of the discovery of unknown archeological resources or human remains.



Mike Garcia
Director/Tribal Historic Preservation Officer
Santa Ana Tribal Historic Preservation Office

May 24, 2012

Date

COMMENTS ON DRAFT EA



Mid-Region Council of Governments

Debbie O'Malley
Chair, Board of Directors
Councilor, City of Albuquerque

June 8, 2012

Dewey V. Cave
Executive Director

MEMBER GOVERNMENTS

City of Albuquerque
Albuquerque Public Schools
Albuquerque Metropolitan
Arroyo Flood Control
Authority
City of Belen
Bernalillo County
Town of Bernalillo
Village of Bosque Farms
Village of Corrales
Village of Cuba
Town of Edgewood
Village of Encino
Town of Estancia
Village of Jemez Springs
Village of Los Lunas
Los Lunas Schools
Village of Los Ranchos
de Albuquerque
Middle Rio Grande
Conservancy District
City of Moriarty
Town of Mountainair
Town of Peralta
City of Rio Rancho
Rio Rancho Public Schools
Sandoval County
Southern Sandoval
County Arroyo Flood
Control Authority
Village of Tijeras
Torrance County
Valencia County
Village of Willard

NEPA Program Manager
377 MSG/CEANQ
2050 Wyoming Boulevard SE Suite 125
KAFB, NM 87117

Re: Environmental Assessment for proposed helicopter landing zone

Dear Sir:

On behalf of the Mid-Region Council of Governments (MRCOG), I would like to give my support for the Kirtland Air Force Base (KAFB) mission in regards to the proposed subleasing of property in McIntosh, NM, to be used as a new low-dust Helicopter Landing Zone (HLZ).

It is my understanding that the proposal involves subleasing approximately 25 acres of land that is currently used to grow Bermuda grass. At this time the MRCOG does not anticipate major impacts. However, the KAFB may be required to obtain land use permits for the proposed use from Torrance County. Please contact Steve Guetschow, Torrance County Planner, at 505-246-4761, or sguetschow@torrancecountynm.org for more information.

The mission of the Kirtland Air Force is very important in this region and the MRCOG communities. This application for funding in no way conflicts with local or regional plans.

Please let me know if my staff or I can support you further.

Sincerely,

Dewey V. Cave
Executive Director

DC/SG



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 377TH AIR BASE WING (AFMC)



94416

APR 25 2012

Colonel John C. Kubinec
377 ABW/CC
2000 Wyoming Blvd SE Suite E-3
Kirtland AFB NM 87117-5000

Ms. Jan Biella
Acting State Historic Preservation Officer
Department of Cultural Affairs
Historic Preservation Division
Bataan Memorial Building
407 Galisteo Street Suite 236
Santa Fe New Mexico 87501

Dear Ms. Biella

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Please send your written responses to the NEPA Program Manager, 377 MSG/CEANQ, 2050 Wyoming Boulevard SE, Suite 125, Kirtland AFB NM 87117, or via email to nepa@kirtland.af.mil.

Sincerely


JOHN C. KUBINEC, Colonel, USAF
Commander

Attachment: Project Location Figure

No Historic Properties Affected.

 31-MAY-2012
NM State Historic Preservation Officer



SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

Office of the Secretary

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DAVE MARTIN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

June 26, 2012

Colonel John C. Kubinec
377ABW/CC
2000 Wyoming Blvd SE Suite E-3
Kirtland AFB NM 87117-5000

**RE: Environmental Assessment for the Proposed Subleasing of a New Low-dust
Helicopter Landing Zone in McIntosh, New Mexico (NMED File No. 3714 ER)**

Dear Colonel Kubinec:

Your letter regarding the above named project was received in the New Mexico Environment Department (NMED) and was sent to various Bureaus for review and comment. Comments were provided by the Surface Water Quality Bureau, Ground Water Quality Bureau and Air Quality Bureau and are as follows.

Surface Water Quality Bureau

The U.S. Environmental Protection Agency (USEPA) requires National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) coverage for storm water discharges from construction projects (common plans of development) that will result in the disturbance (or re-disturbance) of one or more acres, including expansions, of total land area. It is unclear that the disturbance associated with this project will exceed one acre (including staging areas, etc.). If so, it may require appropriate NPDES permit coverage prior to beginning construction (small, one - five acre, construction projects may be able to qualify for a waiver in lieu of permit coverage - see Appendix C).

Among other things, this permit requires that a Storm Water Pollution Prevention Plan (SWPPP) be prepared for the site and that appropriate Best Management Practices (BMPs) be installed and maintained both during and after construction to prevent, to the extent practicable, pollutants (primarily sediment, oil & grease and construction materials from construction sites) in storm water runoff from entering waters of the U.S. This permit also requires that permanent stabilization measures (revegetation, paving, etc.), and permanent storm water management measures (storm water detention/retention structures, velocity dissipation devices, etc.) be implemented post construction to minimize, in the long term, pollutants in storm water runoff from entering these waters. In addition, permittees must ensure that there is no increase in sediment yield and flow

velocity from the construction site (both during and after construction) compared to pre-construction, undisturbed conditions (see Subpart 9.4.1.1)

You should also be aware that EPA requires that all "operators" (see Appendix A) obtain NPDES permit coverage for construction projects. Generally, this means that at least two parties will require permit coverage. The owner/developer of this construction project who has operational control over project specifications, the general contractor who has day-to-day operational control of those activities at the site, which are necessary to ensure compliance with the storm water pollution plan and other permit conditions, and possibly other "operators" will require appropriate NPDES permit coverage for this project.

The CGP was re-issued effective February 16, 2012. The CGP, Notice of Intent (NOI), Fact Sheet, and Federal Register notice can be downloaded at:
<http://cfpub.epa.gov/npdes/stormwater/cgp.cfm>

Ground Water Quality Bureau

Ground Water Quality Bureau staff reviewed the above-referenced document as requested, focusing specifically on the potential effect to ground water quality in the area of the proposed project.

The letter states that the United States Air Force's 58th Special Operations Wing (SOW) is proposing to sublease a new low-dust helicopter zone (HLZ) that will primarily be used by CV-22 tilt-rotor and HH-60 rotary aircraft operating from Kirkland AFB in Albuquerque, NM. The new facility is located approximately 25 miles east of Kirkland AFB and is approximately 25 acres in size. The land is privately owned and has been leased, managed and maintained by Gardner Turfgrass commercially growing Bermudagrass for over 20 years. The Air Force is proposing to sublease 25 acres for use as the low-dust HLZ with Gardner Turfgrass continuing to irrigate the Bermudagrass at the proposed location.

Implementation of the project may involve the use of heavy equipment, thereby leading to the possibility of contaminant releases (e.g., fuel, hydraulic fluid, etc.) associated with heavy equipment malfunctions. The GWQB advises all parties involved in the project to be aware of discharge notification requirements contained in 20.6.2.1203 NMAC. Compliance with the notification and response requirements will ensure the protection of ground water quality in the vicinity of the project.

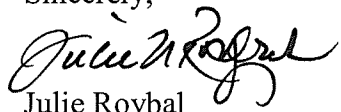
Air Quality Bureau

The Air Quality Bureau has evaluated the proposal you have submitted with respect to the proposed Low Dust Helicopter Landing Zone near McIntosh, Torrance County. Torrance County is currently considered to be in attainment with all New Mexico and National Ambient Air Quality Standards.

The project description does not identify any specific construction projects from which increases in air pollutant emission would result. It is important that all county and local ordinances are followed for the duration of this project.

I hope this information is helpful to you.

Sincerely,

A handwritten signature in black ink, appearing to read "Julie Roybal". The signature is fluid and cursive, with the first name "Julie" and last name "Roybal" clearly distinguishable.

Julie Roybal

Environmental Impact Review Coordinator

NMED File #3714 ER

Rose, Kathy L

Subject: FW: Dust Free HLZ, CV-22, Gardner Turfgrass Lease - Raptor Survey

-----Original Message-----

From: Adkins, Joshua S Civ USAF AFMC 377 MSG/CEAO [\[mailto:Joshua.Adkins@kirtland.af.mil\]](mailto:Joshua.Adkins@kirtland.af.mil)

Sent: Thursday, June 28, 2012 12:04 PM

To: STOUGH, MARK K GS-13 USAF DoD AFCEE/TDX; Rose, Kathy L

Subject: FW: Dust Free HLZ, CV-22, Gardner Turfgrass Lease - Raptor Survey

FYI

-----Original Message-----

From: Finley, Carol A Civ USAF AFMC 377 MSG/CEANQ

Sent: Thursday, June 28, 2012 6:32 AM

To: Adkins, Joshua S Civ USAF AFMC 377 MSG/CEAO; Garcia, Martha E Civ USAF AFMC 377 MSG/CEAO

Subject: FW: Dust Free HLZ, CV-22, Gardner Turfgrass Lease - Raptor Survey

-----Original Message-----

From: Watson, Mark L., DGF [\[mailto:mark.watson@state.nm.us\]](mailto:mark.watson@state.nm.us)

Sent: Wednesday, June 27, 2012 4:48 PM

To: Finley, Carol A Civ USAF AFMC 377 MSG/CEANQ

Subject: RE: Dust Free HLZ, CV-22, Gardner Turfgrass Lease - Raptor Survey

Hi Carol, we appreciated your efforts and those of the contractor to conduct the raptor survey.

Mark

Mark L. Watson

Terrrestrial Habitat Specialist

Technical Guidance Section

Conservation Services Division

New Mexico Department of Game and Fish

P.O. Box 25112

Santa Fe, NM 87504-5112

505.476.8115

Fax: 505.476.8128

Support New Mexico's Wildlife. Buy a Hunting, Fishing, or Trapping License and give to the Share with Wildlife Program.

From: Finley, Carol A Civ USAF AFMC 377 MSG/CEANQ
[Carol.Finley@kirtland.af.mil]
Sent: Wednesday, June 27, 2012 6:52 AM
To: Watson, Mark L., DGF
Subject: FW: Dust Free HLZ, CV-22, Gardner Turfgrass Lease - Raptor Survey

Hi Mark,
Below is the raptor survey confirmation you requested.

Have a great day,
Carol

-----Original Message-----

From: STOUGH, MARK K GS-13 USAF DoD AFCEE/TDX [\[mailto:mark.stough@us.af.mil\]](mailto:mark.stough@us.af.mil)

Sent: Wednesday, June 27, 2012 6:27 AM
To: Finley, Carol A Civ USAF AFMC 377 MSG/CEANQ
Cc: Adkins, Joshua S Civ USAF AFMC 377 MSG/CEAO; RISTAU, TONI K CTR USAF
AETC AFCEE/TDX
Subject: Dust Free HLZ, CV-22, Gardner Turfgrass Lease - Raptor Survey
Importance: High

Good morning Carol,

Below is our planned approach to addressing NMF&G's comment on the subject environmental assessment (EA) regarding a raptors survey. It would be great if you could email the below (quotation marks) over to your POC at NMF&G and obtain their expeditious concurrence so we can proceed with the survey. The Contractor preparing the EA is willing to send out a biologist from their local office to perform the survey.

Email text>

"Thank you for your comment on the proposal to establish a new low-dust helicopter landing zone (HLZ) in New Mexico to support aircrew training by the 58th Special Operations Wing (58 SOW) from Kirtland Air Force Base (AFB). As you note in your letter dated May 25, 2012, the proposed low-dust landing zone is located near McIntosh, NM, on privately owned land currently being used for sod production.

The land proposed for use for the low dust landing zone is privately owned and has been leased, managed, and maintained by Gardner Turfgrass for over 20 years for sod production. The 25 acres proposed for use by the Air Force are within the leasehold and within the portion of the leasehold that currently supports Bermudagrass.

Though the potential for adversely affecting raptors nesting in this area is considered to be low, to address your concern, the Air Force proposes a one-day field excursion by a biologist to the site by July 6, 2012 (within

the current breeding season). Consistent with the ability to access the quarter-quarter section (40 acres) where the landing zone will be located (approximate centerpoint at +34.877, -106.019) and the ability to access neighboring privately owned lands, the biologist will survey the site for the presence of active and inactive raptor nests or other large stick nests (if any) within approximately one half mile of the center point identified above.

At the conclusion of the survey, the biologist will provide approximate location information regarding any nests or nesting activity observed within the site (or if there are none, will so report). Findings regarding effect presented in the Environmental Assessment will be revised as necessary.

If you have any questions or wish to discuss the foregoing, please give me a call at 505-846-0053. If the above approach is acceptable, please indicate your concurrence with the above approach via email by June 29, 2012." <email text

Please let me know if you have any questions.

Thanks for your support !

//SIGNED//

MARK STOUGH, GS-13, DAF

Project Manager, Air Force NEPA Center, HQ AFCEE/TDX Office 210.395.8439;

Fax 210.395.8413; DSN 969.8439; BB 210.957.9643

Rose, Kathy L

Subject: FW: Comment; 58th SOW Low-Dust HLZ

From: 377 MSG/CEAN NEPA Environmental Assessment
Sent: Tuesday, July 03, 2012 1:29 PM
To: 'kathy.rose@cardnotec.com'
Cc: Adkins, Joshua S Civ USAF AFMC 377 MSG/CEAO
Subject: FW: Comment; 58th SOW Low-Dust HLZ

Good afternoon Ms. Rose,

Below is an e-mail we received this morning from the Torrance County P&Z Coordinator regarding the 58 SOW Low-Dust HLZ EA.

Martha E. Garcia
NEPA Specialist
377 MSG/CEAO
(505) 846-6446
DSN: 246-6446

From: Steven Guetschow [<mailto:SGuetschow@torrancecountynm.org>]
Sent: Tuesday, July 03, 2012 9:14 AM
To: 'Sandy Gaiser'; 377 MSG/CEAN NEPA Environmental Assessment
Subject: Comment; 58th SOW Low-Dust HLZ

Nepa program manager,

Thank you for sending a draft of your environmental assessment for the McIntosh low dust HLZ. I have read the assessment and found an error on page 3-2 in the table no. 3.1-1 and at the bottom of page 3-4 where it states the proposed HLZ is not within a flood plain. According to Flood Hazard Boundary Map (FHBM) no. 3501330008A (B) nearly all of Section 32, T.8N., R.7E is within the Special Flood Hazard Zone A in which the base flood elevation is considered two feet. Although the area is not in a riverine condition it is subject to a sheet flooding condition.

If your determination of the floodplain comes from a source other than the published FEMA map, I would be interested in knowing what source that is.

Note: In 2007 when FEMA last upgraded the FHBM map the only change to Torrance County maps was the suffix letter "A" to "B". There were no other changes in locations of the Special Flood Hazard Zone A.

Steven Guetschow
Torrance County
P&Z Coordinator
(505) 246-4761

From: [377 MSG/CEAN NEPA Environmental Assessment](#)
To: [Rose, Kathy L](#); [STOUGH, MARK K GS-13 USAF DoD AFCEE/TDX](#)
Subject: RE: Comment; 58th SOW Low-Dust HLZ
Date: Thursday, July 12, 2012 5:31:19 PM

Hello, I received another comment for the Low Dust HLZ EA. The letter was hand written on a little piece of paper that I cannot scan so I am going to type it out.

Dated: 6/30/12

Hello- I got a chance to read about the helicopter stuff you're going to do in McIntosh. It didn't seem like the flight paths of the cranes had been taken into account as thoroughly as they might have been. They fly from Nov or so till late Dec some years and they do use the air space you are going to use. Please don't disrupt their flight patterns. I know we are at war and it is serious and I respect that also and thank you for your service.

Sincerely,
Diane Stayner
McIntosh

Please let me know if you all need to see the exact letter. If so I will try and figure out a way to scan and send it to you all.

Thank you.



THE
NAVAJO
NATION



Historic Preservation Department, POB 4950, Window Rock, AZ 86515 • PH: 928.871-7198 • FAX: 928.871.7886

BEN SHELLY
PRESIDENT

REX LEE JIM
VICE-PRESIDENT

July 18, 2012

NEPA Program Manager
377 MSG/CEAO
2050 Wyoming Blvd SE.
Suite 125
Kirtland AFB, NM 87117

Dear Madam or Sir:

The Historic Preservation Department-Traditional Culture Program (HPD-TCP) is in receipt of the proposed project regarding the Draft Environmental Assessment for Establishing a Low-Dust Helicopter Landing Zone for Kirtland AFB, Albuquerque, New Mexico.

After reviewing your consultation documents, HPD-TCP has concluded the proposed undertaking/project area **will not impact** Navajo traditional cultural resources. The HPD-TCP, on behalf of the Navajo Nation has no concerns at this time.

However, the determination made by the HPD-TCP does not necessarily mean that the Navajo Nation has no interest or concerns with the proposed project. If the proposed project inadvertently discovers habitation sites, plant gathering areas, human remains and objects of cultural patrimony, the HPD-TCP request that we be notified respectively in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA).

The HPD-TCP appreciates The Department of the Air Force's consultation efforts, pursuant to 36 CFR Pt. 800.1 (c)(2)(iii). Should you have any additional concerns and/or questions do not hesitate to contact me electronically at tony@navajohistoricpreservation.org or telephone at 928-871-7750.

Sincerely,

Tony H. Joe, Jr., Supervisory Anthropologist (Section 106 Consultations)
Historic Preservation Department-Traditional Culture Program

TCP
cc: 12-279
Office File/Chrono

COMMENTS ON DRAFT FINAL EA

Rose, Kathy L

Subject: FW: low dust HLZ in McIntosh

From: Steven Guetschow [<mailto:SGuetschow@torrancecountynm.org>]

Sent: Tuesday, September 25, 2012 2:38 PM

To: 377 MSG/CEAN NEPA Environmental Assessment

Subject: low dust HLZ in McIntosh

Dear Colonel Kubinec and or NEPA program manager.

I have received and read the Draft Final Environmental Assessment dated August 2012 and see you have accurately described the conditions relating to the property proposed for the site.

Just an FYI concerning Special Flood Hazard Areas on an FHBM. While there is not a detailed study to confirm the BFE it is estimated to be two feet for general development purposes as provided for by FEMA.

This does not affect your current proposed use of the HLZ site, but if in the future the Command wishes to improve the site with a building or mobile office the stipulations of CFR 44 section 60-3 will apply. This site, in a storm water event is subject to "sheet flooding" which occurs when the ground is saturated and water drains off with velocities lower than five feet per second. Unprotected fill is allowed to raise the floor level of a building above the BFE. For a properly anchored mobile unit the floor level is raised to a height of three feet above the lowest adjacent grade.

Steven Guetschow
Torrance County
P&Z Coordinator
(505) 246-4761



SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

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DAVE MARTIN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

October 30, 2012

NEPA Program Manager
377MSG/CEAO
2500 Wyoming Blvd SE
Kirtland AFB, NM 87117
nepa@kirtland.af.mil

RESPONSE BY EMAIL

RE: Low Dust Helicopter Landing Zone in McIntosh, NM

Dear Program Manager:

Your letter regarding the above named project was received in the New Mexico Environment Department (NMED) and was sent to various Bureaus for review and comment. Comments were provided by the Surface Water Quality Bureau, Air Quality Bureau, and are as follows.

Surface Water Quality Bureau

SWQB previously commented on this project under NMED File No. 3714 on June 13, 2012. SWQB has no additional comments. For convenience, the original comments were as follows:

The U.S. Environmental Protection Agency (USEPA) requires National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) coverage for storm water discharges from construction projects (common plans of development) that will result in the disturbance (or re-disturbance) of one or more acres, including expansions, of total land area. It is unclear that the disturbance associated with this project will exceed one acre (including staging areas, etc.). If so, it may require appropriate NPDES permit coverage prior to beginning construction (small, one - five acre, construction projects may be able to qualify for a waiver in lieu of permit coverage - see Appendix C).

Among other things, this permit requires that a Storm Water Pollution Prevention Plan (SWPPP) be prepared for the site and that appropriate Best Management Practices (BMPs) be installed and maintained both during and after construction to prevent, to the extent practicable, pollutants (primarily sediment, oil & grease and construction materials from construction sites) in storm water runoff from entering waters of the U.S. This permit also requires that permanent stabilization measures (revegetation, paving, etc.), and permanent storm water management measures (storm water detention/retention structures, velocity dissipation devices, etc.) be implemented post construction to minimize, in the long term, pollutants in storm water runoff from entering these waters. In addition, permittees must ensure that there is no increase

in sediment yield and flow velocity from the construction site (both during and after construction) compared to pre-construction, undisturbed conditions (see Subpart 9.4.1.1)

You should also be aware that EPA requires that all "operators" (see Appendix A) obtain NPDES permit coverage for construction projects. Generally, this means that at least two parties will require permit coverage. The owner/developer of this construction project who has operational control over project specifications, the general contractor who has day-to-day operational control of those activities at the site, which are necessary to ensure compliance with the storm water pollution plan and other permit conditions, and possibly other "operators" will require appropriate NPDES permit coverage for this project.

The CGP was re-issued effective February 16, 2012. The CGP, Notice of Intent (NOI), Fact Sheet, and Federal Register notice can be downloaded at:
<http://cfpub.epa.gov/npdes/stormwater/cgp.cfm>

Air Quality Bureau

The Air Quality Bureau has evaluated the information submitted with respect to the Low Dust Helicopter Landing Zone, Torrance County. Torrance County is considered to be in attainment with all New Mexico and National Ambient Air Quality Standards.

To further ensure air quality standards are met, applicable local or county regulations requiring noise and/or dust control must be followed; if none are in effect, controlling construction-related air quality impacts during projects should be considered to reduce the impact of fugitive dust and/or noise on community members.

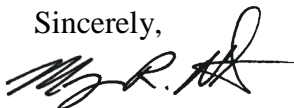
Potential exists for temporary increases in dust and emissions from earthmoving, construction equipment, and other vehicles; however the increases should not result in non-attainment of air quality standards. Dust control measures should be taken to minimize the release of particulates due to vehicular traffic and construction. Areas disturbed by the construction activities, within and adjacent to the project area should be reclaimed to avoid long-term problems with erosion and fugitive dust

All asphalt, concrete, quarrying, crushing and screening facilities contracted in conjunction with the proposed project must have current and proper air quality permits. For more information on air quality permitting and modeling requirements, please refer to 20.2.72 NMAC.

The project as proposed should have no long-term significant impacts to ambient air quality.

I hope this information is helpful to you.

Sincerely,

A handwritten signature in black ink, appearing to read 'M.R. Nelson', with a stylized flourish at the end.

Morgan R. Nelson
Environmental Impact Review Coordinator
NMED File Number: EIR 3789

APPENDIX B

NOTICE OF AVAILABILITY

DEPARTMENT OF THE AIR FORCE

NOTICE OF AVAILABILITY FOR PUBLIC REVIEW OF THE DRAFT ENVIRONMENTAL ASSESSMENT (EA) AND DRAFT FINDING OF NO SIGNIFICANT IMPACTS (FONSI) FOR THE ESTABLISHMENT OF A LOW-DUST HELICOPTER LANDING ZONE IN MCINTOSH, NEW MEXICO FOR THE 58TH SPECIAL OPERATIONS WING, KIRTLAND AFB, NEW MEXICO (NM)

Pursuant to the Council on Environmental Quality regulations (40 Code of Federal Regulations § 1500-1508) implementing the procedural provisions of the National Environmental Policy Act (NEPA), the Air Force gives notice that a Draft EA and Draft FONSI have been prepared to assess the impacts of leasing a 25-acre site in McIntosh, NM and operating CV-22, HH-60, and UH-1 aircraft for Helicopter Landing Zone (HLZ) training in a low-dust environment. The 58th Special Operations Wing needs this near-by, low-dust HLZ to decrease the wear and tear on aircraft engines and equipment, minimize time lost flying to and from the base to the current low-dust HLZ in southeastern Colorado, lessen costs incurred for fuel, and decrease the distance maintenance aircrews need to travel in case of aircraft breakdowns. The Draft EA and Draft FONSI are available for review at the libraries indicated below and at the following website:
<http://www.kirtland.af.mil/environment.asp>.

Estancia Public Library	600 S Tenth Street	Estancia	87016
Moriarty Community Library	202 South Broadway	Moriarty	87035
Mountainair Public Library	109 N. Roosevelt	Mountainair	87036
East Mountain Library	1 Old Tijeras Rd.	Tijeras	87059
Ernie Pyle Library	900 Girard SE	Albuquerque	87106
Albuquerque Main Library	501 Copper NW	Albuquerque	87102
San Pedro Library	5600 Trumbull SE	Albuquerque	87108
Lomas Tramway Library	908 Eastridge NE	Albuquerque	87123

The Air Force invites the public to review the Draft EA and Draft FONSI for 30 days ending July 10, 2012. Please provide any comments or concerns to the NEPA Program Manager, 377 MSG/CEAO, 2050 Wyoming Boulevard SE, Suite 125, Kirtland AFB NM 87117, or via email to nepa@kirtland.af.mil. Your response by July 10, 2012 will ensure all information and concerns are adequately addressed in the Final EA.

DEPARTMENT OF THE AIR FORCE

NOTICE OF AVAILABILITY FOR PUBLIC REVIEW OF THE DRAFT FINAL ENVIRONMENTAL ASSESSMENT (EA) AND DRAFT FINDING OF NO SIGNIFICANT IMPACTS (FONSI) AND FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA) FOR THE ESTABLISHMENT OF A LOW-DUST HELICOPTER LANDING ZONE IN MCINTOSH, NEW MEXICO FOR THE 58TH SPECIAL OPERATIONS WING, KIRTLAND AFB, NEW MEXICO (NM).

Pursuant to Air Force directives in 32 Code of Federal Regulations 989.14(g) and 989.15(e)(2)(iii) regarding 100-year floodplains, additional analyses are required, and the action may only proceed pursuant to a finding of no practicable alternative (FONPA).

In response to these directives, and as a result of other comments received on the Draft EA, various sections of the Draft EA were revised and new information regarding environmental effects incorporated. In addition, the draft FONSI was revised and a FONPA statement added. Therefore, the Draft Final EA (incorporating new information) and Draft FONSI/FONPA (reflecting the additional analyses in the revised EA) are made available for public review for 30 days commencing on the date of this announcement.

The Draft-Final EA and Draft FONSI/FONPA are available for review at the libraries indicated below and at the following website: <http://www.kirtland.af.mil/environment.asp>.

Estancia Public Library	600 S Tenth Street	Estancia	87016
Moriarty Community Library	202 South Broadway	Moriarty	87035
Mountainair Public Library	109 N. Roosevelt	Mountainair	87036
East Mountain Library	1 Old Tijeras Rd.	Tijeras	87059
Ernie Pyle Library	900 Girard SE	Albuquerque	87106
Albuquerque Main Library	501 Copper NW	Albuquerque	87102
San Pedro Library	5600 Trumbull SE	Albuquerque	87108
Lomas Tramway Library	908 Eastridge NE	Albuquerque	87123

Please provide any comments or concerns to the NEPA Program Manager, 377 MSG/CEAO, 2050 Wyoming Boulevard SE, Suite 125, Kirtland AFB NM 87117, or via email to nepa@kirtland.af.mil. Your response by October, 23, 2012 will ensure all information and concerns are adequately addressed in the Final EA.

APPENDIX C

AIR EMISSIONS CALCULATIONS

TAB A. HLZ Emission Calculations

Table 1. V-22 Operations at Existing HLZ in Pinon Canyon, CO including Cruise Time To/From Kirtland AFB

Flight Operation/M ode	Engine Power Setting	No of engines	Time in Mode (min)	FFR per Engine (lb/hr)	Fuel used (lbs)	Emission Factors (lb/1000 lb fuel)								Emissions from single operation (lb/op)							
						VOC	CO	NOx	SO2	PM10	PM2.5	CO2		VOC	CO	NOx	SO2	PM10	PM2.5	CO2	
¹ Cruise		2	90	1910	5730	0.01	0.52	14.09	0.4	1.58	1.5326	3209		0.057	2.980	80.736	2.292	9.053	8.782	18387.57	
										96			roundtrips per year	5.50	286.04	7750.63	220.03	869.13	843.05	1765207	
Vertical Landing																					
(0°) Approach		2	3	1210	121	0.02	1.2	9.57	0.4	1.58	1.5326	3215		0.002	0.145	1.158	0.048	0.191	0.185	389.02	
(90°) Landing		2	1	1310	44	0.02	1.04	10.22	0.4	1.58	1.5326	3214		0.001	0.045	0.446	0.017	0.069	0.067	140.34	
										960			landings per year	2.88	182.99	1540.07	63.23	249.77	242.27	508185	
Vertical Take off		2	1	1910	64	0.01	0.52	14.09	0.4	1.58	1.5326	3209		0.001	0.033	0.897	0.025	0.101	0.098	204.31	
Helo Climbout		2	2	1770	118	0.01	0.6	13.19	0.4	1.58	1.5326	3210		0.001	0.071	1.556	0.047	0.186	0.181	378.78	
										960			takeoffs per year	1.92	99.75	2355.34	69.76	275.55	267.29	559763	
Hover		2	2.96	1770	175	0.01	0.6	13.19	0.4	1.58	1.5326	3210		0.002	0.105	2.305	0.070	0.276	0.268	560.95	
										192			hovers per year	0.34	20.13	442.55	13.42	52.99	51.46	107701	
Closed Pattern																					
Approach		2	4.74	1210	191	0.02	1.2	9.57	0.4	1.58	1.5326	3215		0.004	0.229	1.829	0.076	0.302	0.293	614.38	
Helo Climbout		2	3.23	1770	191	0.01	0.6	13.19	0.4	1.58	1.5326	3210		0.002	0.115	2.517	0.076	0.302	0.292	612.59	
										576			closed patterns per year	3.456	198.04	2503.27	88.00	347.59	337.16	706736	
													Grand Total in Tons per Year	0.01	0.39	7.30	0.23	0.90	0.87		
¹ FW Cruise mode (nacelles horizontal)													Grand Total GHG in Metric Tons per Year								1655

Table 2. H-60 Operations at Existing HLZ in Pinon Canyon, CO including Cruise Time To/From Kirtland AFB

Flight Operation/M ode	Engine Power Setting	No of engines	Time in Mode (min)	FFR per Engine (lb/hr)	Fuel used (lbs)	Emission Factors (lb/1000 lb fuel)								Emissions from single operation (lb/op)							
						VOC	CO	NOx	SO2	PM10	PM2.5	CO2		VOC	CO	NOx	SO2	PM10	PM2.5	CO2	
¹ Cruise 65% Torque		2	90	600	1800	0.55	6.25	6.4	0.4	4.2	4.074	3221.36		0.990	11.250	11.520	0.720	7.560	7.333	5798.448	
										88			roundtrips per year	87.12	990.00	1013.76	63.36	665.28	645.32	510263	
Landing																					
Approach 50% Torque		2	5	510	85	0.35	5.24	7.54	0.4	0.17	0.15	3220.29		0.030	0.445	0.641	0.034	0.014	0.013	273.639	
										880			landings per year	26.17	391.83	563.82	29.91	12.71	11.22	240802	
Takeoff 90% Torque		2	2.61	713	62	0.42	3.41	8.59	0.4	0.39	0.35	3218.61		0.026	0.211	0.533	0.025	0.024	0.022	199.623	
										880			take offs per year	22.92	186.11	468.83	21.83	21.29	19.10	175668	
Hover 80% Torque		2	2.96	707	70	0.55	4.61	6.9	0.4	4.2	4.074	3220.1		0.038	0.322	0.482	0.028	0.293	0.284	224.766	
										176			hovers per year	6.76	56.63	84.77	4.91	51.60	50.05	39559	
Closed Pattern																					
Approach 50% Torque		2	11.26	510	191	0.35	5.24	7.54	0.4	0.17	0.15	3220.29		0.067	1.003	1.443	0.077	0.033	0.029	616.340	
Climbout 90% Torque		2	2.61	596	52	0.42	3.92	8.16	0.4	0.4	0.36	3218.61		0.022	0.203	0.423	0.021	0.021	0.019	166.960	
										440			closed patterns per year	39.06	530.75	821.21	42.81	23.45	20.85	344652	
													Grand Total in Tons per Year	0.09	1.08	1.48	0.08	0.39	0.37		
													Grand Total GHG in Metric Tons per Year								595

Table 3. Existing HLZ Emissions

	VOC	CO	NOx	SO2	PM10	PM2.5	CO2
Total Annual Operational Emissions Associated with Existing HLZ in Tons per Year	0.10	1.47	8.77	0.31	1.28	1.24	
Total Annual Operational GHG Emissions Associated with Existing HLZ in Metric Tons per Year							2249

Table 4. V-22 Operations at Proposed HLZ in McIntosh, NM including Cruise Time To/From Kirtland AFB

Flight Operation/M ode	Engine Power Setting	No of engines	Time in Mode (min)	FFR per Engine (lb/hr)	Fuel used (lbs)	Emission Factors (lb/1000 lb fuel)								Emissions from single operation (lb/op)						
						VOC	CO	NOx	SO2	PM10	PM2.5	CO2		VOC	CO	NOx	SO2	PM10	PM2.5	CO2
¹ Cruise		2	60	1910	3820	0.01	0.52	14.09	0.4	1.58	1.5326	3209		0.0382	1.9864	53.8238	1.528	6.0356	5.854532	12258.38
										96			roundtrips per year	3.67	190.69	5167.08	146.69	579.42	562.04	1176804
Vertical Landing																				
(0°) Approach		2	3	1210	121	0.02	1.2	9.57	0.4	1.58	1.5326	3215		0.0024	0.1452	1.1580	0.0484	0.1912	0.1854	389.02
(90°) Landing		2	1	1310	44	0.02	1.04	10.22	0.4	1.58	1.5326	3214		0.0009	0.0454	0.4463	0.0175	0.0690	0.0669	140.34
										960			landings per year	3.168	182.98	1540.13	63.26	249.77	243.17	508185
Vertical Take off		2	1	1910	64	0.01	0.52	14.09	0.4	1.58	1.5326	3209		0.0006	0.0331	0.8971	0.0255	0.1006	0.0976	204.31
Helo Climbout		2	2	1770	118	0.01	0.6	13.19	0.4	1.58	1.5326	3210		0.0012	0.0708	1.5564	0.0472	0.1864	0.1808	378.78
										960			takeoffs per year	1.728	99.74	2355.36	69.79	275.52	267.26	559763
Hover		2	2.96	1770	175	0.01	0.6	13.19	0.4	1.58	1.5326	3210		0.0017	0.1048	2.3049	0.0699	0.2761	0.2678	560.95
										192			hovers per year	0.326	20.13	442.55	13.42	53.01	51.42	107701
Closed Pattern																				
Approach		2	4.74	1210	191	0.02	1.2	9.57	0.4	1.58	1.5326	3215		0.0038	0.2293	1.8288	0.0764	0.3019	0.2929	614.38
Helo Climbout		2	3.23	1770	191	0.01	0.6	13.19	0.4	1.58	1.5326	3210		0.0019	0.1145	2.5171	0.0763	0.3015	0.2925	612.59
										576			closed patterns per year	3.28	198.03	2503.24	87.96	347.56	337.19	706736
													Grand Total in Tons per Year	0.01	0.35	6.00	0.19	0.75	0.73	
¹ FW Cruise mode (nacelles horizontal)													Grand Total GHG in Metric Tons per Year							1388

Table 5. H-60 Operations at Proposed HLZ in McIntosh, NM including Cruise Time To/From Kirtland AFB

Flight Operation/M ode	Engine Power Setting	No of engines	Time in Mode (min)	FFR per Engine (lb/hr)	Fuel used (lbs)	Emission Factors (lb/1000 lb fuel)								Emissions from single operation (lb/op)						
						VOC	CO	NOx	SO2	PM10	PM2.5	CO2		VOC	CO	NOx	SO2	PM10	PM2.5	CO2
¹ Cruise 65% Torque		2	60	600	1200	0.55	6.25	6.4	0.4	4.2	4.074	3221.36		0.660	7.500	7.680	0.480	5.040	4.889	3865.632
										88			roundtrips per year	58.08	660.00	675.84	42.24	443.52	430.21	340176
Landing																				
Approach 50% Torque		2	5	510	85	0.35	5.24	7.54	0.4	0.17	0.15	3220.29		0.030	0.445	0.641	0.034	0.014	0.013	273.639
										880			landings per year	26.40	391.60	564.08	29.92	12.32	11.44	240802
Takeoff 90% Torque		2	2.61	713	62	0.42	3.41	8.59	0.4	0.39	0.35	3218.61		0.026	0.211	0.533	0.025	0.024	0.022	199.623
										880			take offs per year	22.88	185.68	469.04	22.00	21.12	19.36	175668
Hover 80% Torque		2	2.96	707	70	0.55	4.61	6.9	0.4	4.2	4.074	3220.1		0.038	0.322	0.482	0.028	0.293	0.284	224.766
										176			hovers per year	6.69	56.67	84.83	4.93	51.57	49.98	39559
Closed Pattern																				
Approach 50% Torque		2	11.26	510	191	0.35	5.24	7.54	0.4	0.17	0.15	3220.29		0.067	1.003	1.443	0.077	0.033	0.029	616.340
Climbout 90% Torque		2	2.61	596	52	0.42	3.92	8.16	0.4	0.4	0.36	3218.61		0.022	0.203	0.423	0.021	0.021	0.019	166.960
										440			closed patterns per year	39.16	529.32	821.04	43.12	23.76	21.12	344652
													Grand Total in Tons per Year	0.08	0.91	1.31	0.07	0.28	0.27	
													Grand Total GHG in Metric Tons per Year							517

Table 6. Proposed HLZ Emissions

Total Annual Operational Emissions Associated with Proposed HLZ in Tons per Year	VOC	CO	NOx	SO2	PM10	PM2.5	CO2
	0.08	1.26	7.31	0.26	1.03	1.00	
Total Annual Operational GHG Emissions Associated with Proposed HLZ in Metric Tons per Year							1905

Table 7. Net Change in Emissions Due to Implementing Proposed Action

Change in Emissions From Baseline in Tons per Year	VOC	CO	NOx	SO2	PM10	PM2.5	CO2
	-0.02	-0.21	-1.46	-0.05	-0.26	-0.25	
Change in GHG Emissions From Baseline in Metric Tons per Year							-344

Note:

Some of the fuel consumption rates, time in mode and emission factors were derived using the following documents

AESO Memorandum report No. 9965, Revision B, Aircraft Emission Estimates: V-22 Mission Ops Using JP-5. January 2001

AESO Memorandum report No. 9946, Revision E, Aircraft Emission Estimates: V-22 Landing and Takeoff Cycle and In-Frame, Engine Maintenance Testing Using JP-5. January 2001.

AESO Memorandum report No. 9929, Revision A, Aircraft Emission Estimates: H-60 Landing and Takeoff Cycle and In-Frame, Maintenance Testing Using JP-5. November 2009.

Use of these Navy references may result in small differences in results due to use of JP-5 by the reference documents; however these differences would be consistent throughout when comparing existing to proposed actions, therefore the net impacts remain the same.

2012 Kirtland Low-Dust Profiles

		Daily Avg Annual Ops		Daily Busy Month Ops		Annual Ops
		Day	Night	Day	Night	
CV-22						
	Closed Pattern	1.26246575	0.31561644	2.4	0.6	576
	50 ft Hover	0.21041096	0.05260274	0.4	0.1	96
	100 ft Hover	0.21041096	0.05260274	0.4	0.1	96
HH-60						
	Closed Pattern	0.96438356	0.24109589	1.28	0.32	440
	50 ft Hover	0.19287671	0.04821918	0.2133333	0.053333333	88
	100 ft Hover	0.19287671	0.04821918	0.2133333	0.053333333	88

Reference Point

Lat (N): 34.878
Lon (W): 106.0183

1 knot = 1.151 mph
1 mile = 5280 feet

960

2.88

1.92

0

HH-60 Closed Pattern

Distance (ft)	Height (ft AGL)	Airspeed (knots)	Roll Angle	Airspeed (MPH)	Distance (miles)	Time (min)
0	10	5	0	5.755	0	0.000
3038	100	40	-20	46.04	0.58	0.750
14583	100	100	0	115.1	2.19	1.140
21874	100	100	-20	115.1	1.38	0.720
Climbout						2.609
26735	100	90	-20	103.59	0.92	0.533
35910	100	80	0	92.08	1.74	1.132
40770	10	5	0	5.755	0.92	9.596
Approach						11.262
Total Time						13.871

CV-22 Closed Pattern

Distance (ft)	Height (ft AGL)	Airspeed (knots)	Roll Angle	Nacelle Angle	Airspeed (MPH)	Distance (miles)	Time (min)
0	10	5	0	90	5.755	0	0
1000	100	80	0	90	92.08	0.19	0.123
22300	200	210	0	0	241.71	4.03	1.001
49150	200	210	-20	0	241.71	5.09	1.262
67175	200	210	0	0	241.71	3.41	0.847
Climbout						3.235	
76552	100	150	0	60	172.65	1.78	0.617
83000	100	45	0	90	51.795	1.22	1.415
84482	100	20	0	90	23.02	0.28	0.732
85482	10	5	0	90	5.755	0.19	1.975
Approach						4.738	
Total						7.973	

50 ft Hover (CV-22 & HH-60)

Distance (ft)	Height (ft AGL)	Airspeed (knots)	Roll Angle	Airspeed (MPH)	Distance (miles)	Time (min)
0	50	1	0	0		
300	50	1	0	1.151	0.06	2.962

100 ft Hover (CV-22 & HH-60)

Distance (ft)	Height (ft AGL)	Airspeed (knots)	Roll Angle	Airspeed (MPH)	Distance (miles)	Time (min)
0	100	1	0	0		
300	100	1	Grand Total GHG in Metric T	1.151	0.06	2.962

Hover Flight Track

Angle (deg)	Dist/Radius (ft)	Length (ft)	Cum. Length (ft)
0	1	1	1
360	47.5	298	299
0	1	1	300

52.99 51.456

0.00 0

Helicopter Emission Factors from USAF

	Power Setting	Fuel Flow (lb/hr)	Emission Factors in lb/1000 lb fuel burned				
			NO _x	CO	VOCs	PM10	PM2.5
T700-GE-700 H-60 helicopter 2009 Guide	Idle	146.62	2.77	53.07	54.04	1.22	1.1
	Approach	509.84	7.54	5.24	0.35	0.17	0.15
	Climbout	596.36	8.16	3.92	0.42	0.4	0.36
	Takeoff	713.03	8.59	3.41	0.42	0.39	0.35

T406-AD-400 (CV-22) 2004 Guide Not in 2009	Idle	362	4.15	8.35	0.1	1.58	
	Flight Idle	663	6.05	3.47	0.02	1.58	
	Intermediate	948	7.87	1.82	0.02	1.58	
	Max Continuous	2,507	18.03	0.29	0.01	1.58	

T400-CP-400 UH-N1 2009 Guide	Idle	380.69	5.78	0.88	0.12	0.11	0.1
	Approach	262.93	5.78	0.88	0.12	0.15	0.14
	Climbout	367.94	5.78	0.88	0.12	0.33	0.3
	Takeoff	366.85	5.78	0.88	0.12	0.34	0.31
T400-CP-400 UH-N1 2004 Guide	Ground Idle	138	3.05	29.78	10.42	No	Data
	Flight Idle	143	3.08	30.71	8.65	No	Data
	Cruise	283	4.9	2.64	0.18	No	Data
	Military	412	6.68	0.75	0.13	No	Data